

SEA STORIES FOR WONDER EYES



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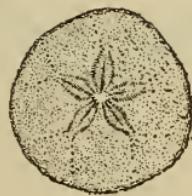
A Little Girl who Wondered

SEA STORIES FOR WONDER EYES

BY

MRS. A. S. HARDY

AUTHOR OF "THREE SINGERS," "THE HALL OF SHELLS"

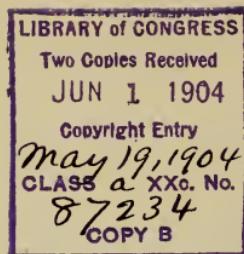


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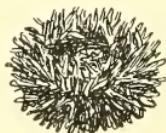


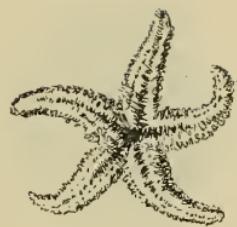


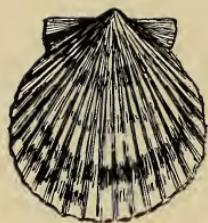
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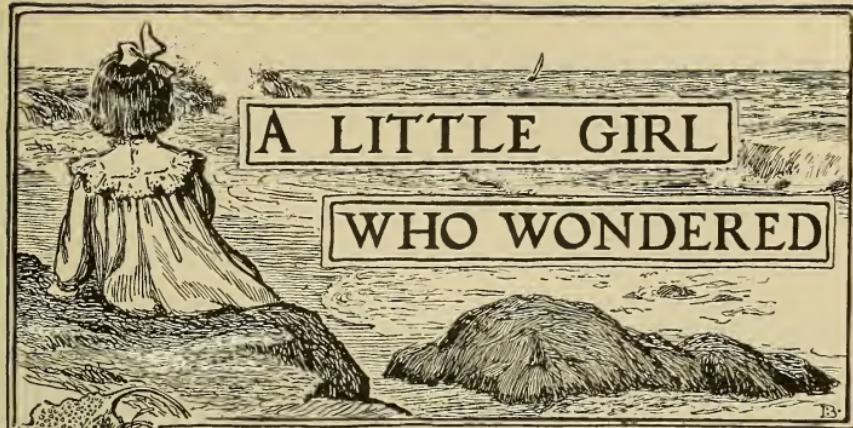
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LITTLE girl sat on a great rock by the sea looking out over the water.

As far as her eye could reach she saw only crested waves that came from far beyond; and every wave was wreathed with foam that flashed like a coronet of jewels.

She had never heard what people say of the strange ebb and flow of the tides, but she knew that twice every day the waves crept up to the rock on which she sat, and that twice every day they receded, leaving a stretch of sandy beach.

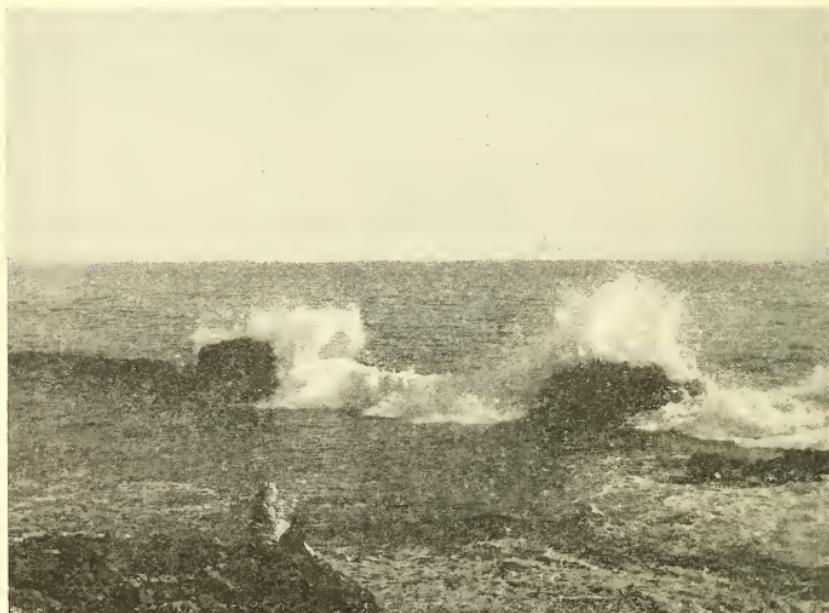
“I wonder who calls the waves back into the deep,” she said softly to herself, and a strange awe came into her heart.

“I wonder if a Voice tells them when they may come back and play upon the sand,” and as she

spoke the tide of awe that rose in her heart gave deep colors to her eyes, like the colors in the sea.

“O wonderful Sea, do tell me some of your secrets!” she exclaimed.

For answer a great wave with a crest of foam rose



up from the green and purple currents and broke with a roaring sea laugh almost at her feet.

When the surf was gone she saw that the wave had left bits of seaweed on the sand, and shells, and queer creeping, wriggling little sea things.

“So this is the way you answer me!” she exclaimed, “and I have to find out everything for myself.”

She climbed down from the great gray rock to better see what the wave had left her.

At first she saw only the shells and coarser wrack that lay exposed, but as her eye grew accustomed to the search she found countless treasures that had been left on the sand, in coves, and imprisoned in the tide pools.

The longer and the closer she looked the more she was rewarded.

The more she saw of the little sea things the more she loved them; and the more she loved them, the more she was able to find.

There were little fleets, tinted and fragile,—such as she had never seen before,—stranded upon the beach.

Scores of tiny beautiful objects lay glittering for a moment in the light, then buried themselves in the sand from sight.

“I wonder what they all are!” she said.

“I wonder where they came from.

“I wonder how they can bury themselves so quickly in the sand.

“I wonder, too, where the stretches of white, silvery sea sand come from.”

Long, graceful curves upon the beach marked the limit of the incoming waves, and all along the sand were strewn the children of the sea.

Slowly again the tide crept up the sand.

"So, old Sea, you are coming back after your treasures, are you?" said the child, "and I must go away.

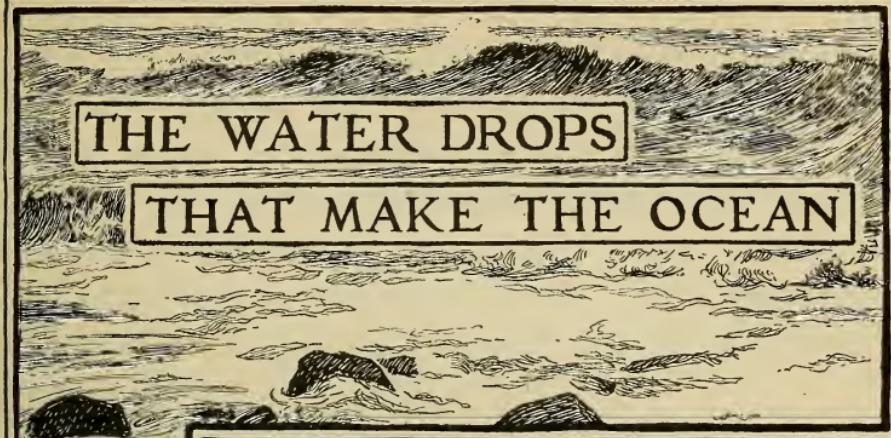
"I love your roar, and your sea songs make me glad; but I wonder what you are singing about.

"I wonder where your bright waves come from.

"Oh, I wonder and wonder so many things!"

For this little girl who sat by the sea and who wondered—and for other girls and boys who wonder—these sea stories have been written.





THE WATER DROPS

THAT MAKE THE OCEAN

W

B.

E see the waves come racing in, one after another, like foaming steeds.

The waters that roll and tumble in crested billows were not always in the sea. They were not always deep-colored with purples and blues and greens. Nor did they always break upon the shore with a roar like thunder.

Even the water drops that crest a single wave were most of them born far away and very far from each other.

They have traveled through many lands to their meeting place — the sea.

Some of them came tripping along in merry little brooks that laughed and sang and ran races.

Sometimes the merry little brooks leaped into each other's arms and journeyed along together, — no longer little rills, but rivers marching with a sterner tread.

I know a river that stopped to work on its way, and at night the stars came down, with the new moon,—like a golden boat,—and sailed on its bosom.

Many of the water drops that help to make the sea waves were once imprisoned in great icebergs, but the sun came with a golden key and unlocked the icy prisons and set the water drops free.



When they were free they ran and ran until they could slip into the sea.

No rill nor raindrop has been too small to help make the waves.

The little waves run together and help make the great billows that dash and roar.

But the water in the brooks and rivers and raindrops was sweet and good to drink.

The sea water is salt and bitter.

That is because the water that has traveled through many lands has brought some of the salt and the bitterness out of the soil it has washed over.

Every drop of water that travels to the sea brings something with it.

If you will take some of the sea water home with you and boil it, the water will vanish away in steam, but it will leave something behind.

You will find left in the dish something that looks a little like snow.

Taste it.

It is salt and bitter like the sea water.

If you can examine it with a magnifying glass you will see that it is in little white flakes.

They are in many shapes and are called crystals.

The square crystals are salt.

There are oblong crystals too.

They are lime.

There are other kinds of crystals left when the water travels away, and they are not shaped like the salt or the lime crystals.

Every kind of crystal has its own shape.

Little wave and crystal

Make a storybook ;

All about a journey

And the road they took.



THE SAND ON THE SEASHORE



THE brooks and the rivers bring more than shining waves and bitter crystals to the sea. They are

Washing with their silver hands
Late and early at the sands;

and they bring grains of sand to the sea in their “silver hands.”

Rivers are strong and are often many years cutting roads through the rock in which to travel.

Some of the pieces of the rock which they cut out they carry to the sea.

Where the earth is very cold there are rivers of ice.

They hear the sea call and travel, like the others, to carry it their gifts.

Because they are ice these rivers must travel very slowly; but they carry heavy loads, which they drop when the ice melts.

The loads of mud and sand and rock grow so heavy that the brooks and rivers cannot carry all of them to the sea.

They have to leave much by the way, but all carry some to the end of the journey and lay it down just where they step into the sea.

The pebbles were not always round and smooth.

They were once broken pieces of rock with rough edges and sharp corners.

They have been rolled about in the water, and rubbed against each other, and ground by the sand till they have lost their rough edges and sharp corners.

The sea is a mighty worker.

Its waves are like hammers that pound and break the hardest stone and undermine and bring down mountains of rock.

They are like millwheels, too, that keep stones whirling round and round upon other stones, crushing all that comes between them.

The stones that are kept turning often wear holes through those stones upon which the waves keep them whirling.

Sand is rock ground fine; and the sand upon a sea beach is powdered rock from many different places, ever changing because the restless waves drag it into the sea and toss other sand upon the shore.

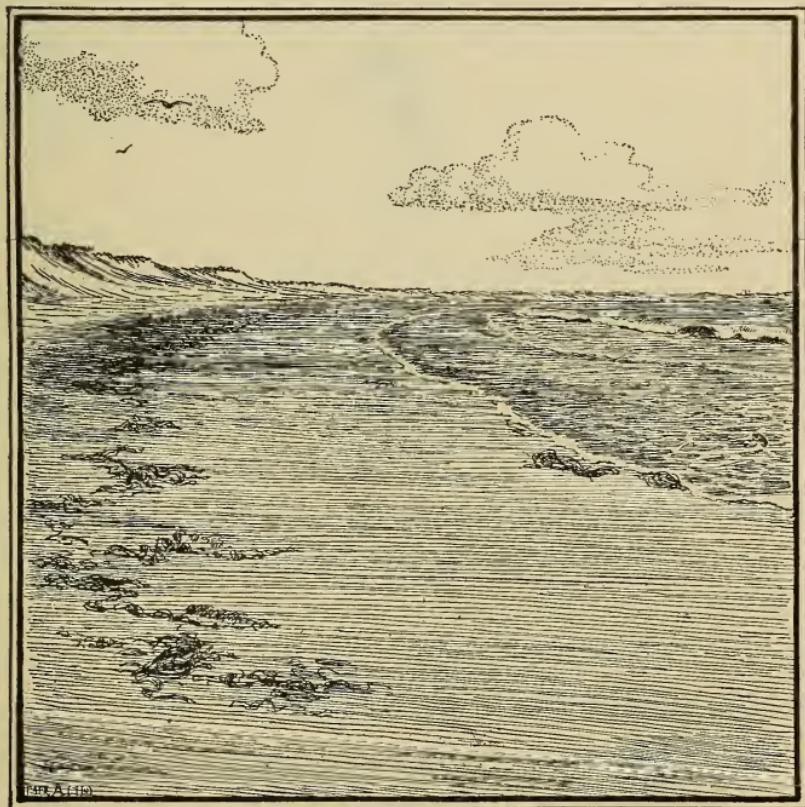


A River that cut its Way to the Sea

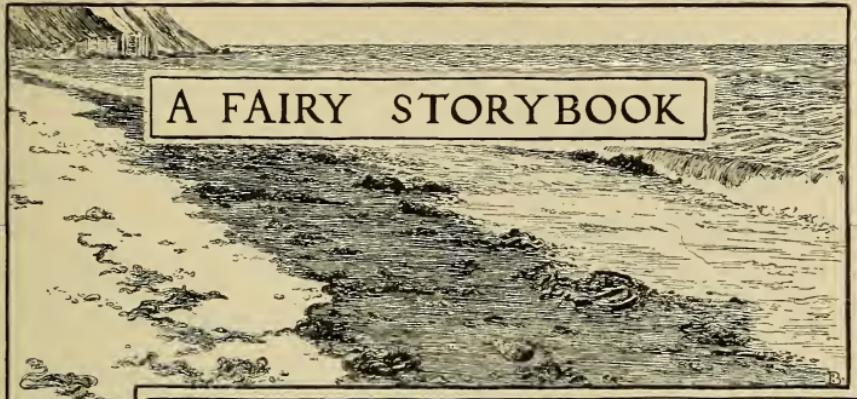
For more years than we can tell, myriads of little shell builders have lived and died, and their shells have gone back into the sea helping to pave its water streets with their fine white lime dust.

This lime dust is mixed with the powdered rock that the waves are ever shifting.

Now you know how the sand along the seashore is made.







A FAIRY STORYBOOK



LITTLE Arab boys have their lessons written in the sand.

It is in the sand that the gray old Sea writes lessons for us to learn, and strange, wonderful stories that are full of mystery.

He makes the seashore like a fairy storybook.

It tells of great giants from whom little water babies hide away, and of pirates who watch to rob the sea-shell boats that come sailing in.

He tells too in his storybook of fairy parties at night down under the waves, where sea stars twinkle and magic lamps shine; and to those who never tire of his tales of wonder he shows that the twinkling sea stars and the magic lamps that shine with lights of many hues are real, living sea creatures who are no less curious and interesting because they are so small.

Many times in a day the waves dash up and rub out all the stories that have been written in the sand; then new stories are written in place of the old.

I will tell you some of the stories I found this morning on the white sea sand.

The waves were playing with a tangle of seaweed. They tossed it up again and again, catching it in their silver hands.

Once, when the waves tossed it shoreward, I caught it.

It looked like only a bunch of seaweed, but there were many stories wrapped up in the pretty tangle.

It was hung full of tiny, living fairy lamps that I knew had been twinkling and flashing wondrously in some dark sea hall, and the story I read was of a beautiful sea garden with caves and arches where sea folks live and sea babies play.

I read how when the fairy lamps flashed the sea people were having a gay carnival, and the sea mothers brought tiny sea babies and laid them to sleep in the corals and among the soft sea mosses.

But the mosses and the long weeds that had been rocking softly to and fro became loosened from the rocks and the coral trees, and the waves carried them away with lamps still hanging in their branches and the sea babies safely wrapped in the mossy tangle.

I brought them all home and put them in a great jar of sea water.

The sea mosses floated out like beautiful plumes; in the darkness the tiny lamps flashed again and the sea babies played as if in their own great garden under the sea.

Another story, not like this, I read in the sand.

The waves were rocking an empty shell upon the beach.

The shell had been an oyster's palace.

He never left it while he lived.

It was only a little house to begin with.

The oyster was so small that he only needed a very small house.

As the oyster grew he made his house larger.

He polished the walls and made them smooth and shining.

He painted them too in pretty tints of pearl and blue and brown.

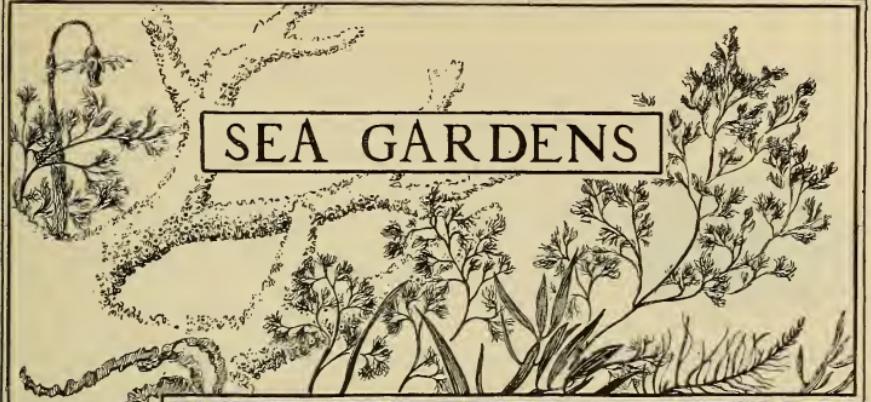
Every day he made his walls a little thicker.

But when I found his house it was empty.

A hole was pierced through its wall.

When I saw the hole I knew a sea pirate had been there and that the little king of the oyster palace would never live there again.





SEA GARDENS

T

HE sea is full of gardens where bright sea flowers grow.

Some of them will thrive in deep water only.

Others love the shallows where the sunshine comes and brings them bright colors.

Fair as are the gardens upon land, the sea has even fairer.

And the strangest thing about them is, that many of the gayest things that grow in the sea gardens are not plants at all.

Curious make-believe lilies and asters grow there, and nod and wave in the water as flowers on the land wave in the wind.

There are coral gardens too in the sea, where graceful shrubs and branching trees grow.

The coral trees are covered with bright blooms and leaves that seem half flower and half jewel.

Big and little burs, mossy and green and brown, lie in the lily beds and walk around in the coral gardens.



But the jeweled coral blossoms and the flowerlike lilies and asters, and even the big and little burs upon the sand, are none of them plants at all.

They are every one sea animals, that eat for breakfast and dinner and supper, and for lunch too, hosts of other animals, just as bright and pretty as they are themselves.

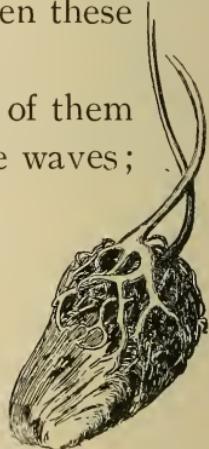
Beside all the make-believe flowers that live in the sea, there are many true plants. But even these have their own strange ways of living.

The seaweeds have no roots and many of them live and thrive while carried about by the waves; others cling to rocks and shells with what look like roots, but are only suckers or holdfasts.

The holdfasts do not feed the seaweeds like roots; they only hold them in place.

The waves bring us tangled bunches of seaweeds:

These from a garden that no man sees,
Where foot of mortal has never trod,
Brought by the billows that we may learn
Of these hidden works of a perfect God.



Some of the seaweeds are fine as hair, others are like graceful plumes or silken tufts, and many are broad and bright like ribbons.

Tossed lightly by the winds and the waves, we may imagine them singing in a soft fashion of their own:

Green earth has her sons and her daughters,
And these have their guerdons ; but we
Are the wind's and the sun's and the water's,
Elect of the sea.

There are others that are hundreds of yards long and are twisted strong as ropes.

Those that grow near the surface of the water are bright green, like grass and land plants.

The lovely pinks and brilliant reds have their homes in deeper water, but, as they are not stay-at-homes, are often found in shoals and tide pools.

The dull browns and olive greens love deep waters ; but the dear old Sea brings them with the others and lays them on the sands at our feet.

Many of the seaweeds are delicate and shy, and hide in shady tide pools or among the rocks. We must seek for such as for shy land flowers if we would find them.

But how they all love the curling waves ! Many varieties that look more fragile than flowers are borne unharmed through stormy tides.

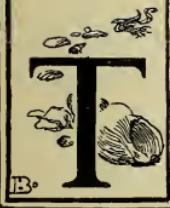
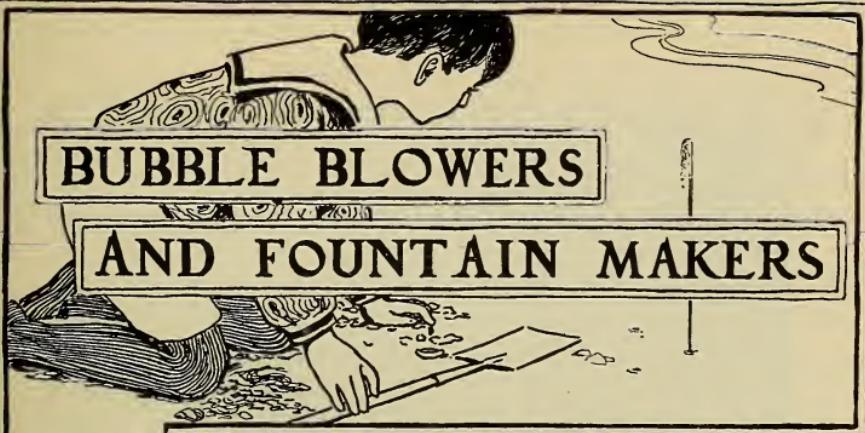
They even ride gayly in on white billows that break against great rocks with a deafening roar.

To the seaweeds cling millions of little sea people, who, if they do not entirely escape notice, may be taken for seaweed blossoms or mermaids' jewels and hidden pearls.

With a glass that magnifies, still other beauties and wonders are to be found, too small to be discerned by the eye alone.

Oh, the water world is a fairy world!





O read the stories and to learn the secrets of the sea we need to keep wide-open eyes and to watch many days.

Not long ago you wondered why air bubbles came up through the sand.

You did not think to dig into the sand, or you would have learned that all the sea stories do not lie on the surface.

That is one of life's secrets, my little man, my little woman! There are many precious stories that are hidden.

There was a little palace buried in the sand where you saw the bubbles rise.

The owner of the palace had his door ajar.

Though covered with sand he breathes air as well as you.

All the sea people breathe air.

Usually it is air mixed with water.

He breathed out so much air that it came in a bubble up through the sand.

Watch, and some day you will see a little jet of water coming out of the sand.

It will look like a little fountain small enough to belong to the fairy people.

That is just what it is.

If you dig into the sand where you see the fairy fountain, you may find the little fountain maker.

He has tubes in his body through which he draws in water and forces it out.

Some of these fountain makers have very long tubes.

They like to lie in the sand and do not wish to be discovered or to give up their pretty stories to any one, so they will quickly draw in their tubes and shut their doors if they feel a touch or a jarring of the sand.

Some of them can dig down into the sand faster than you can follow them with your little seashore shovel.

The next time you see such a little fountain, try to find the fountain maker and see what kind of house he lives in.

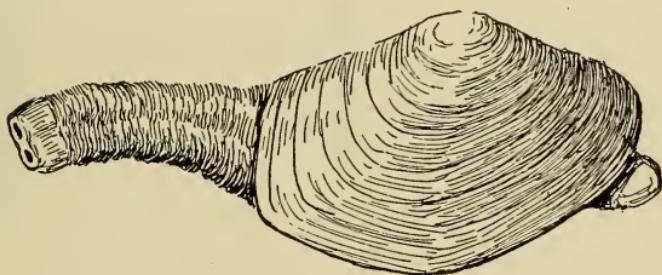
If you will take him home with you and put him into a dish of sea water with a sprinkling of sand and

On the New England Shore

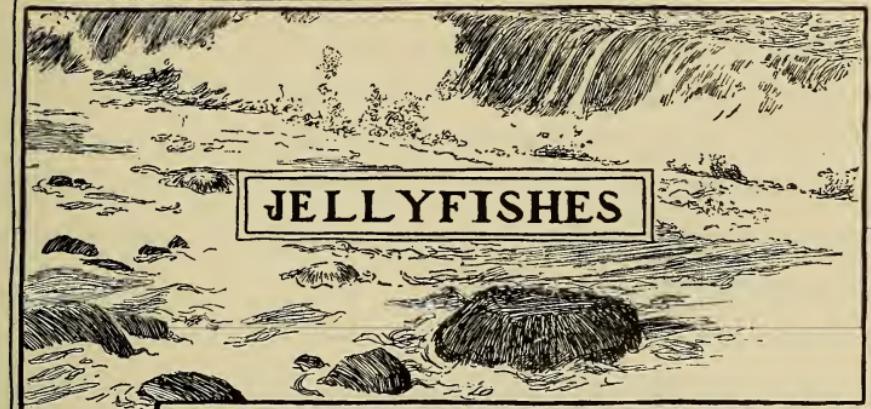


pebbles for a floor, like the sea floor, the little fountain maker may feel so much at home as to show you the way he pushes out and draws back the tubes of which I have told you.

We call these tubes *siphons*.







JELLYFISHES

B.



NCE upon a time some very strange sea people came sailing gracefully into port.

The bodies of these strange people were shaped like flattened globes or disks, and were almost as shining and clear as glass.

They were pale blue and purple and milky white.

A little girl went to walk on the sea sand and saw the strange people. She stood looking at them a moment and then cried out, "Oh, see those beautiful great bubbles!"

"They look like round plates of pale jelly!" said another child.

Both were right, for the strange people looked like great shining bubbles and like globes of pale jelly.

Long ago people had thought the same thing and had named them *Jellyfishes*.

“Sun-jellies,” too, they are sometimes called.

Queer people they seem, and the more we learn about them the queerer and more interesting we find they are.

There are many kinds of jellyfishes that ride on the crested waves, that live in the coral groves and the sea-weed gardens.

Some are several feet across, and others are almost or quite too small to be seen in the daytime.

But even the smallest can be seen in the darkest night.

That is because these people have such a queer custom.

They have pale green lights which they carry with them. That is why they can be seen by night and not by day.

There are often so many of these little light bearers traveling together that they make the waves look as if touched with fire.

Sea people who have such light in their bodies are said to be *phosphorescent*.

There are other things beside bubbles and globes of jelly which these queer people resemble.

Some of them might be taken for seaweeds.

Some look like little morsels of floating ice or tinted seafoam flowers.

Others are like tiny clusters of glittering gems.

The sea has so many of these gemlike organisms that we might imagine sometimes that a mermaid's jewel box had burst open and its glittering contents gone shimmering through the sea.

The sea is full of animals that feed upon jellyfishes; and it is really a good thing that this is so, for if every jellyfish that is born were to live, the sea would be so full of them that there would be no room for anything else.

In some places they cover the sea for miles and make "sea pastures" for the great whales.

The jellyfish has still another name by which it is called. The other name is *Medusa*.

Medusa was the name of a dragonlike woman whom the old Greeks put into one of their stories. Her hair, they said, was a mass of writhing, twisting serpents.

Now many of our great jellyfishes have long streaming threads that float out from their bodies as it was imagined the Medusa's serpentlike hair streamed out.

We call the jellyfishes' floating threads *tentacles*.

Some of the tentacles are very pretty and look like bright seaweeds, fine ribbons, or glittering threads of glass.

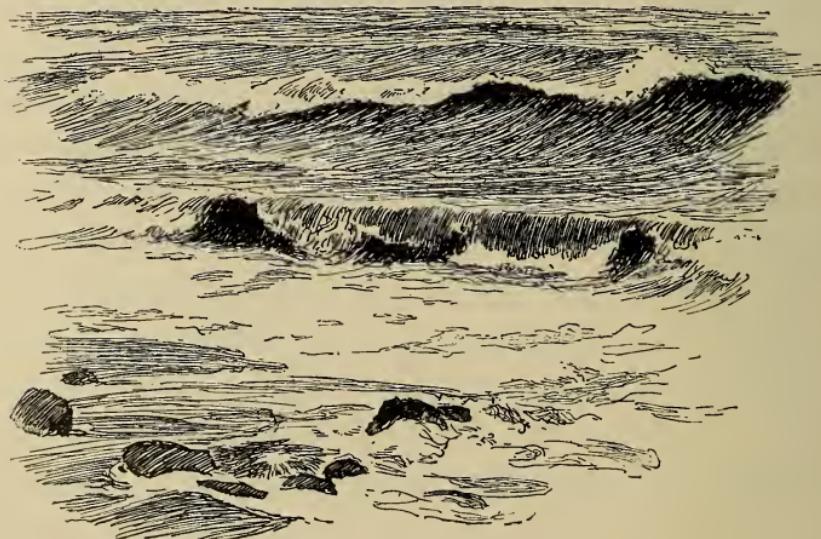
In this they are quite unlike the ugly serpent hair of the Gorgon Medusa, though the tentacles of the jellyfishes have power to sting, somewhat as a serpent

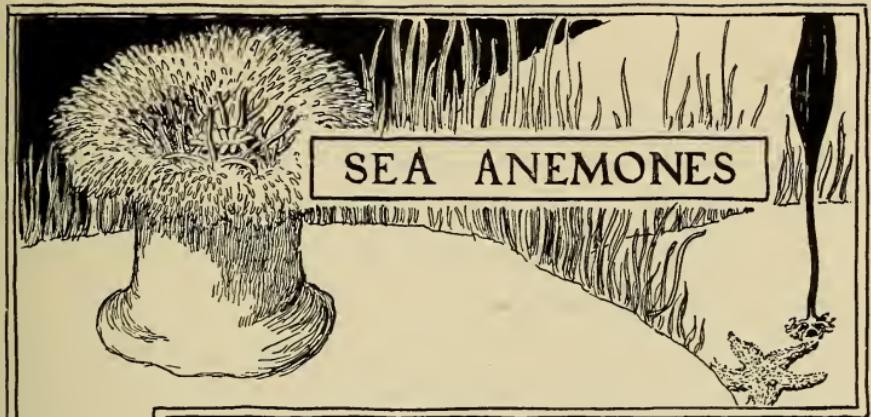
stings; and for this reason great care must be used in examining them, or they will sting us for prying into their affairs.

Their tentacles are filled with little stinging poison cells, which are of use to the jellyfish in benumbing its prey and as a defense against its enemies.

Around the scalloped edges of some of the jellyfishes tiny jewel-like points are to be seen. These points are supposed to be eyes.

Jellyfish with scores of eyes,
Do you ever wink?
I can see with my two eyes
More than you, I think.





YOU know how the field daisies grow. Every daisy nods with a crown of fringes around its head. Many things that grow in the sea will make you think of the daisies, for they too have their little crowns of fringes.

You will think they are sea flowers.

Other people have thought so too.

But if you can watch these sea flowers at home in the sea, you will find they have very queer ways of their own, not at all like the pretty daisy's ways.

You will see their fringes wave to and fro, they will be pushed out and drawn in, and you will learn that these little fringes are like fingers reaching around in the water.

If a little sea animal comes near these fingers, you may see it act as strangely as the sea flowers

themselves, and presently it will be drawn in and out of sight by the fingerlike fringes.

You will learn that it has been *swallowed* by what looked so like a lovely fringed daisy.

The fringes around the head of the flowerlike animal are called *tentacles*.

Beautiful as they are, they are not so harmless as they look, but are crowded with cells that are filled with little poisoned threads.

If once seized by the tentacles of an anemone, a baby crab is benumbed, a sea worm is paralyzed, and a fish soon ceases to struggle, and if small enough they are swallowed.

All this shows that things are not always what they seem, and that we have need to keep wide awake if we would learn the real characters of the people who live in the sea.

It shows too that what looked like a pretty flower could have been no flower at all, for flowers do not kill and devour animals in this way.

That is what the people learned who had believed that one of these pretty sea creatures with the crown of fringes was a flower.

They named it *Anemone*, after one of our daisy-like flowers.

So *Sea Anemone* it is called.

The fringes, which we must learn to call tentacles, are very wonderful indeed.

Small as they are they are hollow.

Not only are they hollow, but each one is divided by thin partitions into tiny chambers.

In the center of the circle of fringing tentacles is the mouth of the sea anemone.

Directly under its mouth is the anemone's stomach.

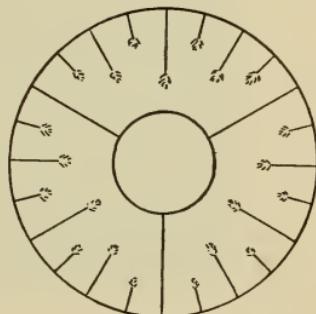
The stomach is like a bag with a hole in the bottom, through which the food passes into another bag, which is the body of the queer anemone.

Whatever is swallowed is carried through the animal's body; when all the nutriment is taken from the food, that which is left goes back by the same road that it came in; that is, it passes out of the animal's mouth.

The larger sac is divided into chambered spaces.

If you could cut across the body of a sea anemone and examine it carefully, you would see that it has partitions which run out or *radiate* from a center like the spokes of a wheel.

The tentacles are also rays arranged in a circle and running out from a center.



Many of the sea animals are made on this plan.

Those that have this plan are related to each other and are called *Radiates*.

The Radiates are very important people in the sea.

There are many families of this name, who look quite different.

They are of all sizes, from an eighth of an inch to more than a foot across.

Our garden flowers stay where we put them.

They cannot go for a walk.

Sometimes the wind breaks their stems and carries them away in its arms.

But if some of these make-believe flowers are watched, it will be seen that they travel about in the sea.

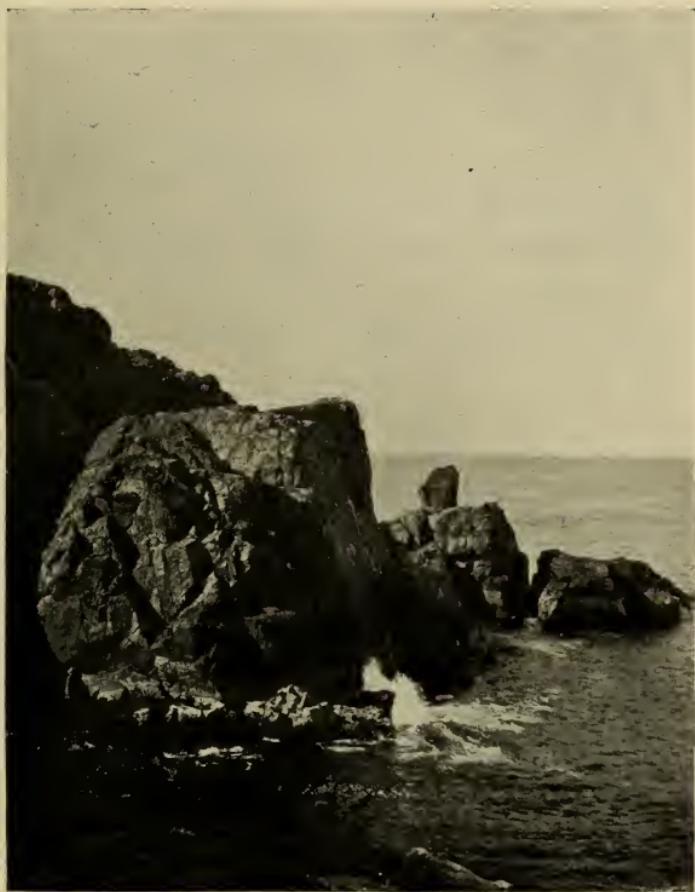
To pull anemones from the rocks that are their sea homes would be to spoil them.

Even if we do no more than touch them, their pretty fringes disappear.

We are reminded of the striking of the clock in the fairy story.

You know the story. It is of a fairy who stayed out too late; at the striking of the hour all her fairy finery disappeared.

So if touched, or even if the water be disturbed about it, the anemone draws in its fringes and



Rocks by the Sea

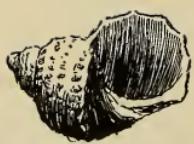
disappears or becomes so old looking and wrinkled and dull and shapeless as hardly to be seen.

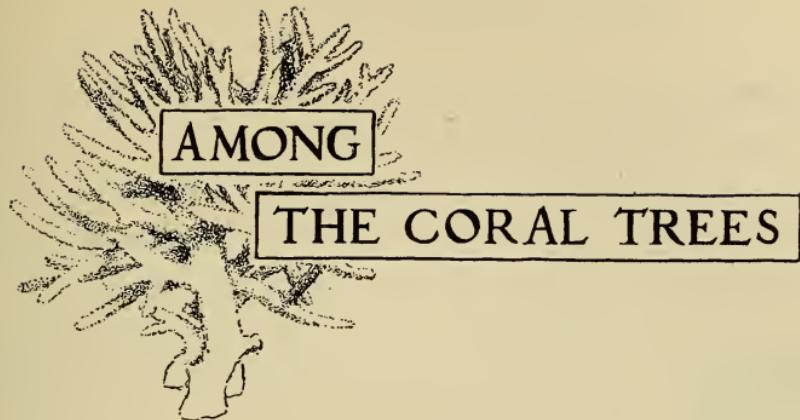
This is a trick anemones play on their enemies, who thus lose sight of them, for they make themselves look so much like the rocks and the seaweeds that they are unnoticed.

The soft little anemones have learned this trick because great fishes like to feed upon them and hungry sea slugs bite pieces out of them.

The sea anemone has no skeleton, and when it dies all trace of it quickly disappears.







AMONG THE CORAL TREES



N some parts of the sea the water is so clear that one may look far down to the bottom and see the forests of coral that are growing there.

Coral trees are graceful and branching, but they are very unlike the trees that grow upon the land.

They bloom with soft, starlike animals in place of leaves and flowers.

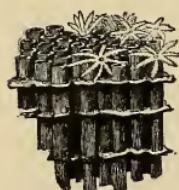
The animal flowers that cover the surface of each living branch and leaf of the coral trees are called *polyps*.

They are made on the wheel plan like the anemones, and like them they have fine fringed tentacles about their tiny mouths.

They are protected by skeletons of lime in which the tiny polyps hide.

The pieces of coral branches we so much admire are the skeletons of great numbers of little polyps who once lived in the branch together.

They lived so close together that when they died their skeletons were still joined to each other.



But when alive the coral stems looked very different from the dry, hard branches that we have.

Then they were soft and downy with the waving, many-colored tentacles of the little polyps.

We say they make the beautiful coral in which they live.

They do not make it in the sense that a bee makes its honeycomb, though honeycomb and coral sometimes resemble each other.

The coral makers make their coral just by living the simple lives that God gives them.

So they build better than they know.

Their skeletons are made of lime, which the little animals gather from the sea water.

The coral people are very sensitive, as we found their cousins, the sea anemones, to be.

The bodies of all the little polyps in one coral town are joined together, each one opening at its base into the body of its next neighbor; and if one little coral

animal is touched or disturbed it quickly draws in its tentacles and hides in its stony skeleton, and instantly the trouble is told in some way to every one in that coral town, and each one draws in its curling fringes and hides as if it had been the one that was touched.

There are two things they must have in order to live and make their fine corals.

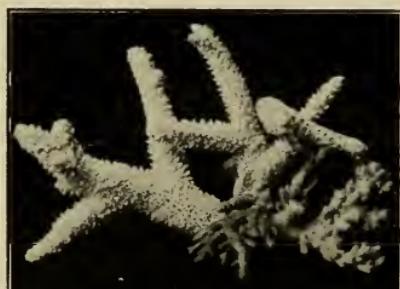
They must have warmth and clear water.

Among the coral trees the strangest and the brightest of sea animals live and play.

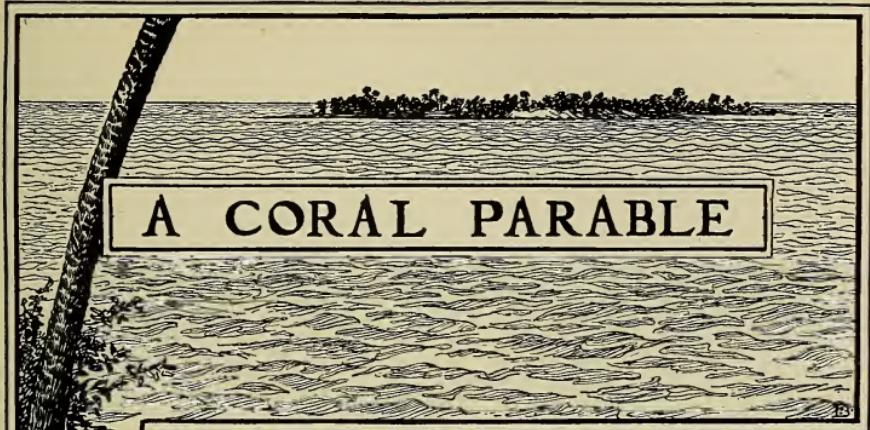
Fiery red, brightest blue, golden yellow, and silver and green are among the colors to be seen there, making the forests under the sea no less gay than the gayest gardens on the land, or than our forests when painted by the frosts of autumn.

Larger animals die and their bodies perish, but skeletons of puny polyps last through the ages and become the foundations of large and beautiful islands.

Surely to be little is not to be useless.







A CORAL PARABLE

A

PARABLE, you know, is a story that means more than its words tell.

It is a kind of fairy pudding with plums hidden in it.

Here is a parable about the little coral builders.

The Lord of the World said, "I need more islands to be homes of people that are to come."

"*We* will build them for you," said the great whales. "We are large and strong. We will tear up the sea sands and pile them where you tell us."

"*We* are too little to be of any use," said the little coral stars, "but we will do the best we can to make islands."

Then the great whales and the dragons and the sharks and the dolphins laughed because such little people as the coral stars should have a thought that *they* could help to make islands.

They all laughed till the sea shook, and people said, "A storm is on the sea."

Then the giants of the sea, the whales, tossed the sea sand into piles, and spouted and flapped and swam until the sea people were sure the islands must be almost done.

But the waves washed the sand dunes back into the depths and the great whales were discouraged.

But there came a day when the dashing waves were stopped by a wall.

They ceased their angry roar and sang softly about low coral ridges that had climbed to the top of the sea.

The waves laughed softly as they patted the ridges with their silver hands, and they said, "The little coral people will build islands yet."

"We will help you, brave little builders," they whispered.

So they washed the light sand up among the reefs and brought seeds to plant in the sand.

The little coral stars built on.

The sand settled more firmly among the coral branches.

The seeds grew.

And there was a day when the Lord of the World came and looked upon the islands and he was well pleased.

SEA FANS



THE waves of the warmer seas bring us samples from the sea fan factories.

Their fans are of finest network and of many colors.

The handles of these fans are like tough stems, covered with bark and having an expanded root.

The "factory hands" who do this fine fan making are polyps, like the coral builders.

Both gather their materials from the sea water, one making marbles and the other horny substances.

Both sets of workers have the same kind of bodies and look like tiny stars.

The expanded tentacles of each are around a central point, which is the mouth of the polyp, opening into its little bag of a stomach.

The tentacles are furnished with stinging cells for defense and to help it in gathering food.

Beside the fan factories there are feather factories in the sea, and whip factories too.

The waves bring us samples of their work.

The samples they bring from the feather factories are graceful plumes of purple and yellow, crimson and brown and white.

Some of them are soft and fine and curling as a bird's feathers; others are tough and stiff, but all are graceful and pretty.

The sea fans and plumes and whips are all flexible; that is, they bend.

When they bend to the sea currents they look more like plants than ever.

No wonder, is it, that people so long thought they were all beautiful plants, and that they still call them animal flowers?

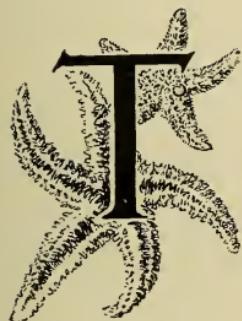
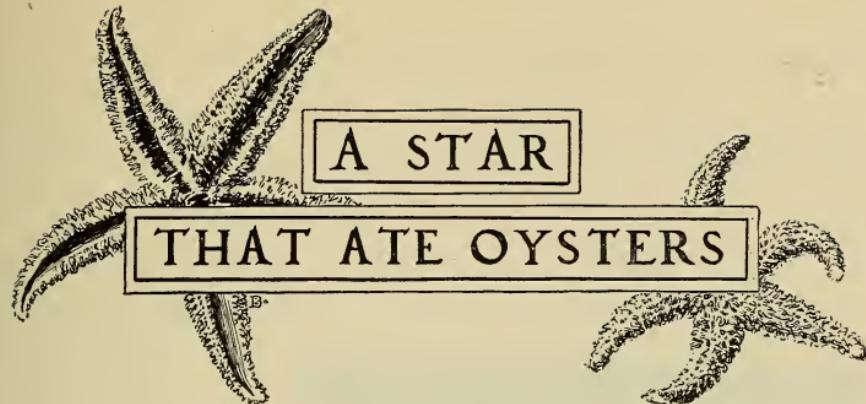
The little polyps are so small as to be each but a speck on the branch where it lives, yet working in harmony they fill the seas with mimic shrubs and trees and flowers.

When alive in the sea our sea fans and whips and plumes were as much prettier than even our pretty dried specimens are as you can think.

Then every one was set thick with what looked like flashing jewels of many colors.



Sea Fan, Sea Plumes, and Sea Whips



HE star I am going to tell you about lived in the Gulf of Mexico. It was called a *Starfish*.

It had hundreds of other starfishes to keep it company.

When I first saw this star it was stealing oysters from Captain Ellis's oyster bed.

Probably it thought as long as the oysters grew in its gulf they belonged to it more than to Captain Ellis, who did n't live in the gulf at all.

One oyster shut its doors against the starfish.

It did not wish to be eaten.

But that made no difference to the starfish, who just pulled out its stomach and wrapped it around the oyster and sucked out its sweet life.

After that the starfish put its stomach back again and walked away.

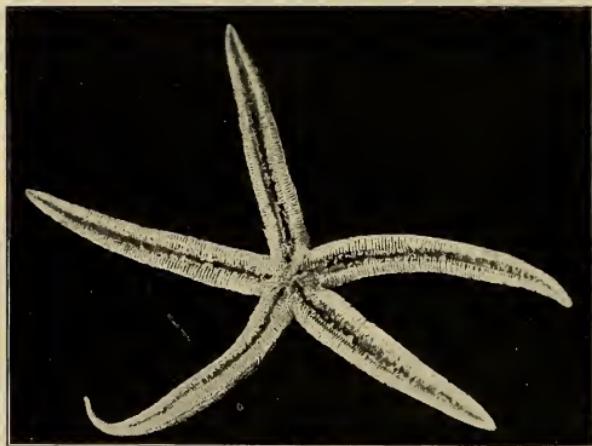
When it was walking away I stopped it.

The starfish had five rays or points, and on the underside of its five rays it had rows of little tubed feet.

For all it had so many feet it walked slowly.

When I touched it, it objected. But really it could not help itself, so it drew in its rows of feet and lay very still.

I went to catch a fiddler crab and when I came back my starfish had pushed out its little feet,—



little worms they looked like,— and had started back for the oyster bed.

I wanted to learn more about this star, so I turned it over on its back.

I found its mouth in the very center of the underside of its body, but its queer little feet were drawn in again.

I pushed it along into a shallow pool of sea water where a piece of driftwood lay.

Soon its queer, wormlike feet were pushed out again. It was on its back, so I could see how they

moved one way and another as if trying to find something to take hold of.

One of the queer feet touched the piece of drift-wood and clung to it.

By this it drew its long ray a little closer to the wood and was able to touch the wood with others of the little feet, which clung as the first had done.

In this way the starfish lifted itself little by little until it finally turned itself right side up.

The feet of starfish are hollow tubes with suckers at the ends. They are called "tube feet." The animal will fasten itself to a rock by these tube feet and even allow its feet to be torn away rather than let go.

An oyster sometimes shuts its doors and catches one of the arms or rays of a robber starfish.

The starfish cares little for the loss of an arm, so snaps it off.

They often break off their rays upon being picked up, or when the waves toss them into the sun, which gives them discomfort.

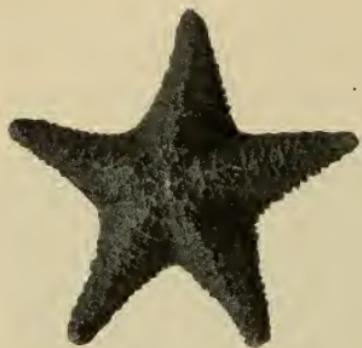
As they are able to grow new rays, they are not much damaged by the loss of one.

In some parts of the sea there are such large starfish settlements as to cover the bottom of the sea.

There are many kinds of starfish, and some of them have more rays than this one of which I am telling you.

The rays are extensions of the body.

Some kinds have a much larger central body and shorter arms than this one.



One kind, called *Brittle Stars*, has rays which are not parts of the body and into which the stomach does not extend.

This kind of starfish is sometimes called "sea spider," because its round body, to which are joined its long, sprawling rays, makes it look a little like a spider.

Brittle Stars get their name from their trick of snapping to pieces when taken from the water.

At the end of each ray the starfish has a tiny red speck, which is its eye.

Mrs. Agassiz, in one of her pretty stories of starfishes, says: "But let me tell you that five of their eyes are by no means so good as one of yours. Yet I once heard a story of a starfish which inclined me to believe that, if they do not see, they have at least some very keen perception of what goes on about them.

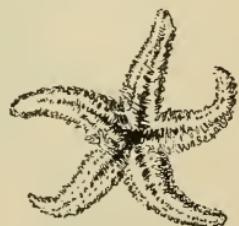
"Starfishes carry their eggs near the mouth, and keep them safely by stretching their suckers around them, and thus holding them fast.

“A friend of mine was one day watching a starfish in a large glass dish, which had its eggs folded within the suckers in this way; and wishing to examine the eggs more closely, he parted the suckers, took the eggs away, and kept them for some time.

“When he finished his examination he dropped them back into the dish. At once, to his surprise, the starfish seemed to be aware that its eggs had been returned to it; and, moving towards them at its utmost speed (which is at best but creeping very slowly), it placed itself over them, folded its suckers once more around them, and so took them up again.

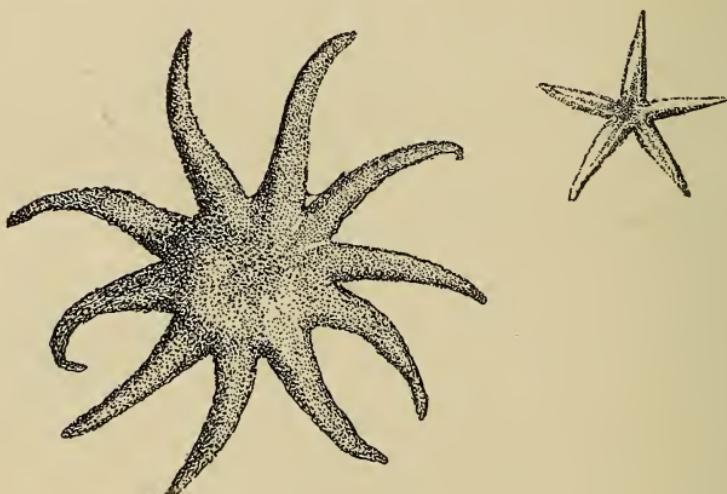
“Wishing to be quite sure that this had not been accidental, he removed the eggs again, put the starfish into another and larger dish; and having placed it at one end, and putting some obstacle in the center of the dish to divide it from the other side, he then dropped the eggs in at the end opposite the parent, as far from it as possible. The starfish immediately began its journey (now quite a long one for a starfish) toward its offspring; and, having reached them, covered them and took them up again as before.

“A third time the experiment was repeated, but always with the same result: the creature perceived

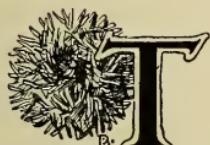
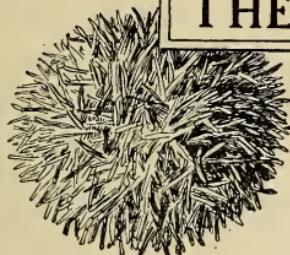


its eggs the moment they were placed in the same vessel with itself, and went at once to shelter and protect them.

“ You see by this it is not lost time to watch even the lowest creatures that God has made. They, too, care for and cherish their young; they have certain ends to fulfil in life, and they, as well as the higher animals, enjoy the existence that has been granted to them.”



THE SEA URCHIN



HIS spiny fellow is a cousin of the starfish.

They were neighbors in the Gulf of Mexico.

Both were made on the Radiate plan and so were relatives of the sea anemone and the starry coral makers.

This spiny fellow's name is *Sea Urchin*.

He is sometimes called a "pin-cushion," a "sea porcupine," and a "sea egg."

Our second picture shows how a sea urchin's shell looks when the spines are off.

The sea urchin who lived in this shell had its home in the Pacific Ocean, but though living so far apart the two sea urchins were near relatives.

Starfishes and sea urchins are very large families and are scattered through many seas.



When these sea urchins were alive their fringes or spines were soft and were moved at the will of the animals who lived in these round box skeletons.

When they died the spines became hard and brittle and were easily broken off.

The spines fitted over the little knobs which are seen in the second picture.

These spines and knobs were arranged in rows dividing the round box into sections.

Between the rows of knobs and spines there were very small holes, hardly as large as the point of a pin would make. Through these holes grew little tube feet.

The feet were connected with the body of the animal within, and could be pushed out or drawn in like those of the starfish.

An ordinary sea urchin has as many as two thousand tube feet.

Neither of these sea urchins looks much like the starfishes, but if the arms of a starfish could be bent over until the points meet, the round ball thus formed would be something like a sea urchin.

The sea urchin has a skeleton on the outside of its body, you see.

It looks as if made of only a single piece, but that is because it is so perfectly done.

Each skeleton is really made of five or six hundred pieces, all joined so nicely that no edges show.

Yet it is at these seams or edges that the skeleton of a sea urchin enlarges.

The little animals secrete a kind of chalky substance from the sea water, of which they make their round box houses.

The mouth of a sea urchin is in the underside of its round body.

The mouth and jaws are made of forty pieces.

Five sharp teeth it has. They are worked up and down and across by strong muscles, and are able to break and grind hard substances to powder.

The tips of these five teeth are easily seen, meeting in a point, and by breaking the skeleton of a dead urchin we find the long, large teeth still there.

Oh, the sea urchin is a wonderful fellow!

The better we know him the more we wonder.

In some places in the sea these little creatures lie so thick that the sea floor looks as if carpeted with soft moss and tiny tinted burs.

They often hide themselves by burrowing in the sand, and, stranger still, they bore little caves for themselves in the hard rock.

How they are able to do this is one of their own wonderful secrets.

Dead urchins are not infrequently found imprisoned in these cavities, which exactly fit their bodies.

Their very caution became their undoing.

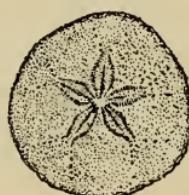
Lying quiet from the stress of waves, they grew too big to get out where they went in, so their caves became their prisons.

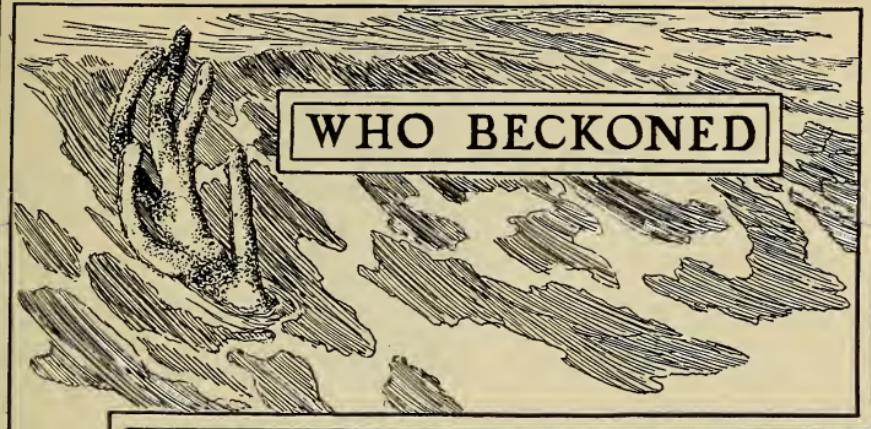
They have fewer enemies than their cousins, the starfishes, but they love to lie in quiet pools and to hide away from sight.

They have a funny trick of drawing seaweeds up on their backs to conceal themselves, and are even found carrying sticks and stones around on their backs for the same purpose.

There is another kind of sea urchin that is flat and thin, and is called "sand dollar," "sand cake," or "cake urchin."

Their shells are beautifully marked, and sometimes lie so thick as to pave the streets of the sea.





WHO BECKONED

IN the edge of the sea, one morning, I saw something that looked, as the waves lifted it, like a hand beckoning to me from the water.

What could it be?

With my long cane made from the stem of a palm leaf I reached out into the water and drew the strange, uncanny fingers to the shore.

Though I did not care to shake hands with such cold and slimy hands, I picked the strange things up.

I found that they too were things that grew in one of the sea's curious gardens.

They were sponges,—a kind of sponge that grows in fingerlike bunches.

I laid them on the sand beyond the reach of the ever-reaching waves.

In a few days I went again to the spot.

My bunches of fingers were still there, but they were changed.

They were no longer soft and slimy, nor bright colored.

When I left them a part were orange red and a part were black.

When I came to them again they were of a dull color, stiff, dry, and full of little holes.

Though stiff, they were not stony and brittle, like the corals, but horny and fibrous.

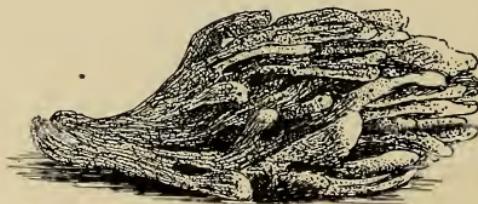
Who could have guessed they were sponges?

The stiff and fibrous parts were the skeletons of the sponge animals.

The small holes through the spongelike fingers showed the passages through which water had passed when the branches were alive.

All these passages were then lined with the living sponge slime.

So it was a sponge hand that beckoned to me from the edge of the water.





SEA

VASES



ANOTHER day curious vases were tossed up to us by the waves, as if the sea would lure us with the sight of some of its treasures.

Well can the sea spare them. Many more are left upon the ledges in the great sea gardens.

But hardly could we imagine the dark, purplish and brown masses standing there to have anything to do with our sea vases.

Our vases are dry and tough and full of fiber.

The masses upon the rocky sea ledges are soft, slimy, and covered with a thin skin.

Both are sponges.

Those upon the rocks in the sea are the soft, jelly-like, living sponge masses.

Our vases are but dry skeletons that are left when the animals die.

Such tough and fibrous skeletons, that hardly anything can bite, are a wonderful protection to the soft sponge animals.

The soft, jellylike masses in the sea are really cities filled with sponge people; and our vase, dry and rough though it now is, was once a little Venice.

The sea washed in and out through its winding streets, and the sea people who lived in this little Venice were as busy "making a living" as larger people are in the larger Venice.

This was a city of cells, and each cell was furnished with tiny hairlike feelers,—*cilia* we must learn to call them.

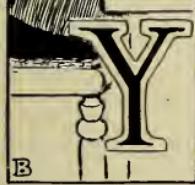
These cilia kept up a ceaseless lashing by which the sea water was drawn in and driven out.

With the sea water came also very small particles of food and lime which these sponge people require for their growth and their building.





BATH SPONGES



OUR bath sponges do not look much like the fingers and the vases we have been learning about.

Bath sponges, you know, are soft and silky, yet they are skeletons too.

The sponge animals that lived in them were soft, jellylike, and slimy, like those that lived in the fingers and the vases.

There are many kinds of sponges, you see.

Your bath sponges are full of holes; there are large holes and small ones.

All these openings run down deep into the sponge and are connected with each other.

The fine holes are like little mouths that take in the sea water.

They are fine so that they may serve as little sieves and keep harmful substances from entering.

Floating in the sea water are very tiny animals upon which the sponge feeds.

The water that flows through every channel of the sponge carries these little animals with it.

It also carries fine particles of lime which the sponge animal uses in making its skeleton.

After the water has gone through all the little channels in the sponge it passes out through the larger holes and back into the sea.

Your bath sponge is made of the skeletons of several sponge animals that grew close together.

You may know how many sponge animals lived in the piece you have by counting the *largest* holes that are in it, as each large hole with the small ones clustering about it makes one sponge animal.

Sponges come from tiny eggs.

Baby sponges at first swim about in the water.

They live their free life only a little while. Then all that escape the hungry mouths of their enemies fasten themselves to something and are soon sponges themselves.

Another way in which sponge gardens are started is to cut the living sponge to pieces and plant the pieces in other places on the sea bottom.

They may grow in almost any seas, but like best to have clear water and hard sea bottom.



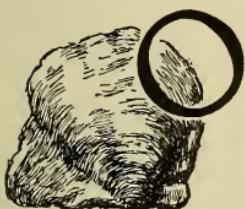
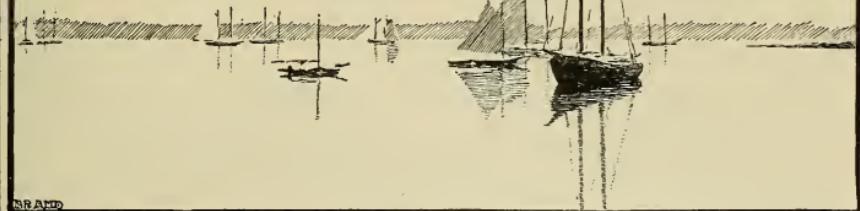
Bishop's Head

When sponges are gathered for market they are treated much as our bunch of "fingers" was treated. The animal matter is allowed to decay; then they are beaten and put in pens to be washed by the waves until they are clean.





A LITTLE MERCHANTMAN



UR little merchantman has pearls to sell.

He brings his pearls in a seashell boat that is lined with mother-of-pearl.

His pearls are large and costly.

Every pearl, he would tell you, has cost him days and nights of suffering and labor.

Trouble and pain came to him. He could not rid himself of them. So he bore the pain patiently and overcame the trouble.

At last the very things that threatened to spoil his beauty and to destroy his life have but added to his beauty and his worth.

It was in this way: cruel grains of sand washed into the oyster's shell.

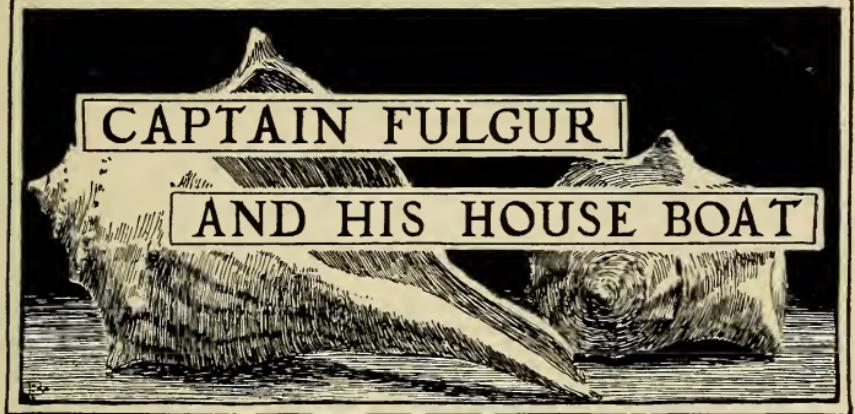
He could not get them out.

Who can tell what suffering the sharp grains caused his tender body?

Since he could not remove them, he set himself to work to cover them with the smooth, shining substance with which his shell was lined.

At last, brave little oyster! by his patience and labor the grains of sand have lost their power to hurt and have been changed to rich and costly pearls.





CAPTAIN FULGUR

AND HIS HOUSE BOAT

HOUSE boats like this one are common along our coasts.

The one who built this house boat was named *Fulgur*. Captain Fulgur we will call him.

He first lived with many other little fulgurs in a long row of cradles — like these.

What a nursery for baby fulgurs was this!

Thousands of them were rocked, and tossed, and kept moist, and sung to by the waves until they were old enough to go out into the wide, watery world by themselves.

They were no bigger than a tiny grain of sand when they lay rocking in their queer cradles, but they were as perfect as if they were full-grown fulgurs.

There came a time when they opened their close little cradles and all rolled out.

They were such little fulgurs then that they had need of only tiny houses in which to live, and the walls of their houses were very thin indeed.

The baby fulgurs were so small and tender and sweet that many of them never grew any bigger, but were eaten up by their sea neighbors.

Our Captain Fulgur lived, though he had many hairbreadth escapes.

Captain Fulgur had one good foot. He would n't have known what to do with two feet. No fulgur ever had but one.

With his foot he could walk and burrow in the sand.

When not in use the foot was drawn into a mantle or fold of skin.

The mantle that covered the fulgur's foot was a part of his body, and a very important part it was.

Inside the mantle there were other little folds called "gills."

The gills were the fulgur's lungs.

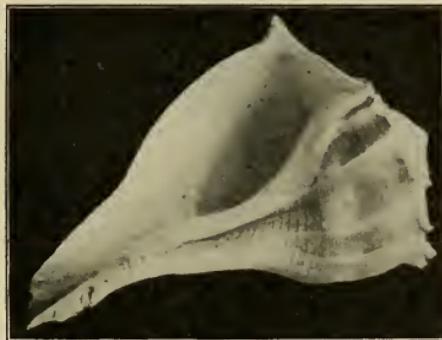
As Captain Fulgur grew his mantle gathered lime from the water and secreted a kind of glue with which to build out the walls of his house boat.

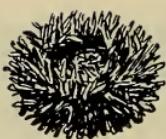
He always built on by making additions at the opening of his shell house.

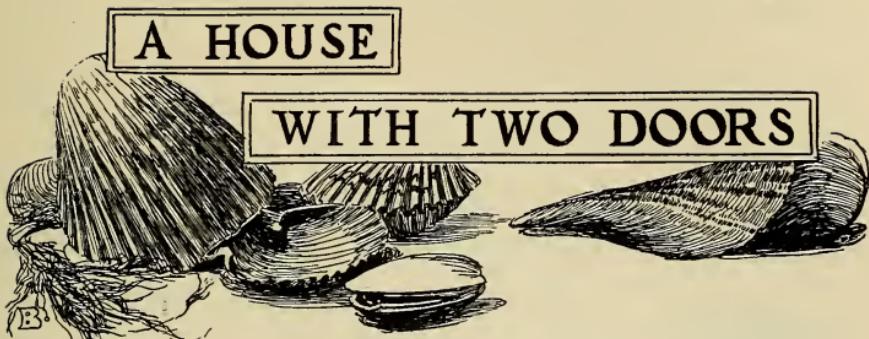
Captain Fulgur was fastened to his house boat. He could only live in that way.

He had a door by which he shut himself in.

When he wished to open his door he had only to push his foot against it.







A HOUSE

WITH TWO DOORS

THE Scallop family live in many seas. We find them all along our coasts.

We never tire of their beautiful shells. The shells are their houses. We often find them with their doors partly open. But touch one and how quickly its doors go together!

The doors are called *valves*.

There are two of them.

Bi means two, so seashells that have two doors or valves are called *Bivalves*.

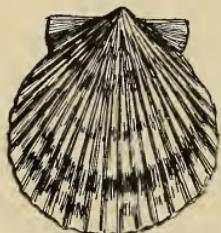
Their doors have a hinge and a strong muscle that draws them together, and they are painted in lovely patterns without and polished and shining within.

But the little people who make these houses and who live in them are even more wonderful than their beautiful houses.

Notice how each shell is decorated with a great number of rays or ribs.

We wonder how a little animal could make them and keep the rays all so true.

The under valve we often find flatter and of a lighter color than the one that is exposed to the light.



From this we learn that the little shell maker uses the sunlight to help him in his painting.

Scallops are not stupid creatures that always lie still in one spot.

They love the deep places in the sea, but are often in the shallows and the tide pools, where we can watch them and wonder at their beauty and rejoice in the Love that has given to these tiny creatures such grace and skill.

If they are disturbed, see how quickly they can bury themselves in the sand; and they know so much that they roil the water to hide themselves from sight.

Peer into the half-open door when the little house-keeper does not know you are prying, and you may see his shining eyes.

But so much as touch him and snap! go his round doors together.

Scallops are sometimes seen at play, swimming and leaping and darting about in the water.

This they are able to do by quick opening and shutting of their valves.

The scallop has other names.

One of its other names is *Pecten*.

Long ago these shells were worn upon hats and mantles as a sign that the wearer was brave and true.

Cockleshells are other kinds of "castles by the sea" that have the double doors. Cockleshell houses are in the shape of a heart.

Many of them are a good deal larger than those of the scallop.

They are painted too and beautifully decorated with rays or ridges.

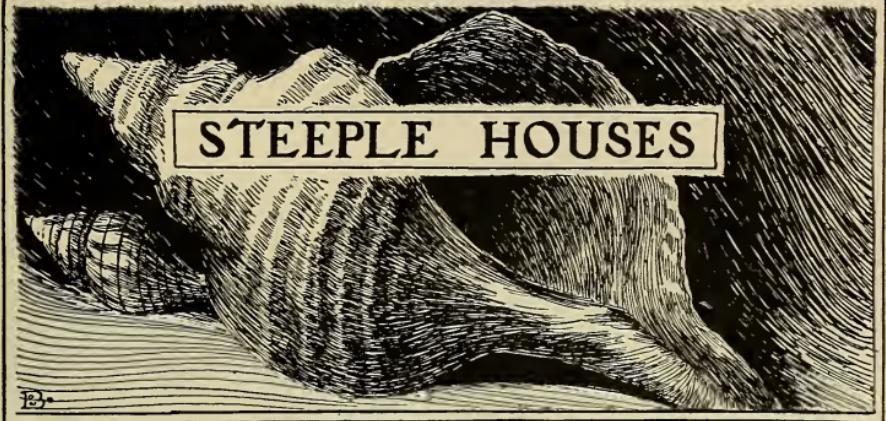
Some of the rays or ribs are themselves trimmed with fine points and scales.

There is almost no end to the kind of houses these little sea people build.

The clams and the oysters, the mussels and the "razors" are all neighbors who have houses with double doors and so all of them are bivalves.







STEEPLE HOUSES

MANY of the little sea people live in houses with steeple tops.

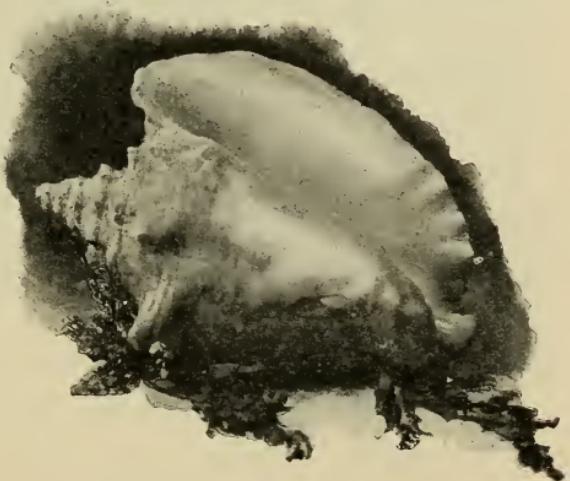
There is one we often see that was built where seas are always warm.

It is a large house and painted within as pink as a rose.

We call this the house of a *Conch* or a *Strombus*.

When the animal living in such a house goes to make calls or to market, it advances by queer jerks and jumps.

It always carries its steeple house on its back.



There are smaller houses, millions of them, built with spires or steeples, many of them much sharper than that of the strombus.

They are all made in one piece, and so are said to be *Univalves*.

Many are so small we are not likely to see them.

But, no matter how small they are, each one is as carefully made as if it were a big conch shell, for God's work is always perfect.

Most of these kinds of shells are ornamented with colors and with knobs and spines.

The spines are for protection as well as for ornamentation, and cover some shells with needlelike points.

Many of the people who live in these steeple houses are not so good as people who live in houses with steeples ought to be, for they are housebreakers.

They are not only housebreakers, but they devour the inmates of the houses whose walls they pierce.

Even the thick walls of an oyster's palace are not proof against the boring of their filelike tongues, which are supplied with rows of sharp teeth.

Shells are often found that have been pierced or that have been broken and mended.

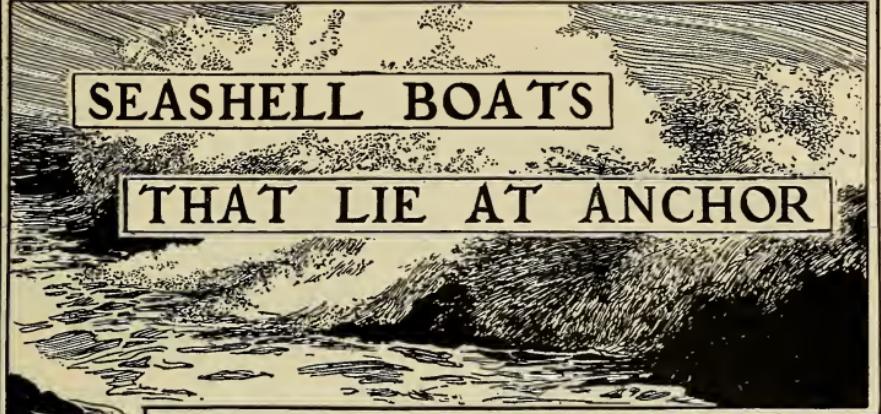
These little sea people do their mending so nicely that it hardly shows; even the decorations that have

been marred are repaired and the delicately painted traceries are renewed.

Wonderful little sea people!







SEASHELL BOATS

THAT LIE AT ANCHOR

BRAND

W

HEN storms are on the deep the waves are lashed into foaming masses that seem to roll mountain high.

If the sun shines the mountains of mist are hung with quivering rainbows.

But there is neither sunshine nor rainbow to lighten many a stormy sea.

Our good seamen cast out anchors fastened to long, strong ropes to steady their tossing ships.

Seashell shalllops also are beaten about by the stormy surges and often they suffer wreck.

But there are little mariners who sail in seashell boats who know how to anchor their vessels too.

More wonderful still, they spin and twist their own cables as they need them.

A cable that holds a seashell boat is called a *byssus*.

The little cable maker has a foot which he can use as a spade to dig for himself a hiding place in the sand or as a spinning machine.

There is a little gland in his foot from which he throws out the fine threads, which are fluidlike at first but quickly grow hard and strong in the air.



Some seashell cables are stiff and horny, others are fine and soft as silk.

Cloth has been woven from the fine silk byssus threads taken from some shells.

Often a little notch is to be seen in the edge of shells through which the byssus cables pass.

We find mussels so anchored, and the shining *Anomias*. *Anomias* are the thin, transparent, gold and silver shells so abundant along our Atlantic coast.

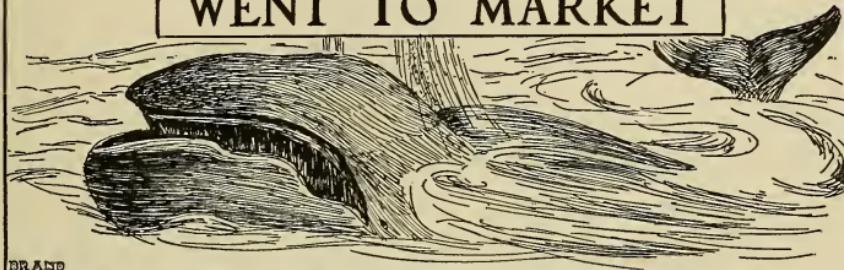
They have the under valve flattened and a little hole near one edge through which the tiny cable passes.

Our great beautiful *Pinna* or *Wing Shell* on the Florida coast is moored by a bunch of cables that are tough and strong enough to hold so big a bark.



HOW A GIANT

WENT TO MARKET



HIS giant was many times larger than an elephant.

When he was only a baby he was fifteen feet long.

His head was one third the length of his whole body.

Though his head was so huge, each ear was so small that a dime would cover it, and his eyes were hard to find.

He lived in the sea, yet he was not a fish; for he had warm, red blood, and he had to come often to the surface to breathe, and would have drowned if he had stayed under the water too long.

His mouth was big enough to hold half a dozen men at once, and he had a tongue that was ten feet broad and eighteen feet long.

This was the kind of a giant that went to market.

He was a king in the sea.

But, being a good, old-fashioned, sensible king, he preferred to go to market for himself.

The sharks and the dolphins and the sea serpents did not mind his coming.

They knew he was not after any of them, so they just flirted their tails — their way of shaking hands, I suppose — as they met.

They knew he was going to market for little crabs and lobsters and shrimps and jellyfishes, for, big as his jaws were, his throat was not more than two inches across.

There were other giants that went with him, for these giants are fond of each other's company.

But the market they went to had food enough to supply them all.

These giants had no teeth, but in their mouths were rows of long bones, hundreds of them arranged in plates.

These bones formed a kind of sieve through which the giants forced out the water taken in with their food, for their markets were in the sea and the waves were colored with what they fed upon.

The giant I am telling you about is the great *Greenland Whale* that plunges about in the icy northern seas.

He is never cold among the icebergs, for over his huge body he wears a layer of fat like a warm overcoat.

Whales love their big babies and will die in their defense.

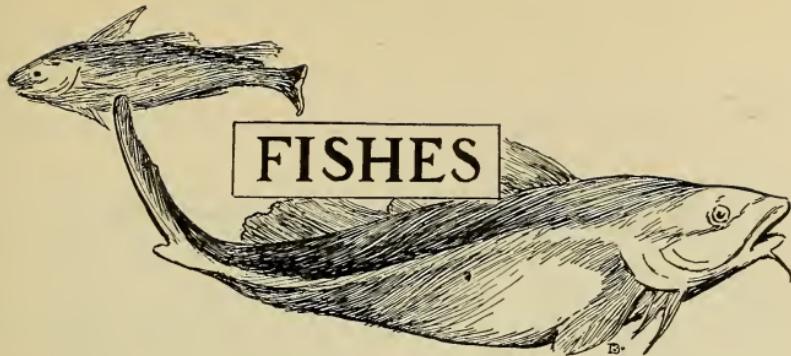
They have lungs and must have plenty of air.

Their noses or "blowholes" are on top of their heads, so they are able to breathe while their bodies are still under the water.

These giants of creation leap into the air and sport among the foaming billows as gayly and gracefully as if they did not weigh so many tons.







WE are learning how in all God's wonderful world the creatures he has made are fitted for the kinds of lives they are to live.

The body of a fish is shaped so that it may pass through the water with the utmost ease and speed.

We shape the keels of our boats on the same plan, making the prows wedge-shaped.

Yet boats that are our pride for swiftness cannot match a little silvery salmon as it shoots through the water. Even an arrow is not more swift.

Every part of a fish is so made as to help it to swim. Its body is flexible; that is, it bends.

It is covered with a kind of slime.

Most fishes have an air bladder extending along the back.

A fish's fins are its wings to fly with through the watery world. Its tail is wing and rudder together.

Its fins are folds of the skin which covers its body, spread out and made strong with spines.

Some fishes have their fins so large and strong that they can use them as wings to fly short distances in the air.

By rising on their winglike fins they are often able to escape their enemies in the water.

Fishes must have air to breathe, but they can only breathe air that comes to them through the water.

Their gills, which are to be seen on each side of their heads, are delicately fringed and may be called their lungs.

Their eyes are so made as to enable them to see under the water.

I have seen fishes that lived in a river in a dark cave.

They had no eyes. No light entered the cavern and so they had no use for eyes.

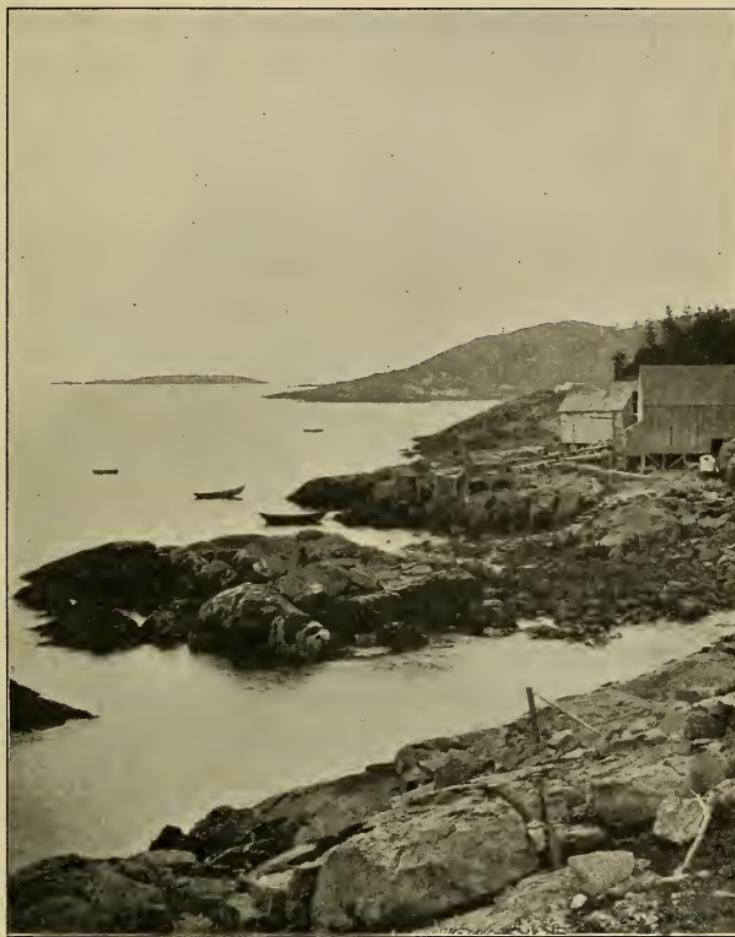
Only scars showed where eyes belonged.

Some fishes live in hot springs.

A fish's scales are its armor. See how they overlap so as to make a complete covering; yet they do not hinder the easy and graceful movements of the wearer.

Scales are of all sizes from a mere point to a large plate; and their colors are beautiful beyond words.

They are often brilliant as gems, and as the light flashes over them they show all the hues of the rainbow.



In Boothbay Harbor

Imagine a fish whose whole body flashes with colors like those on the throat of a humming bird.

Some are burnished blue; others are red dashed with shining black and touched with silver; others again wear golden armor with trimmings of silver, or with spots and bands of black.

And as if all these bright colors were not enough, some fish are electrical, and like living lamps they glide through the sea.

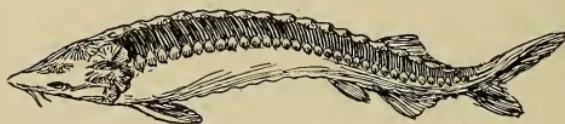
A fish when carefully studied will be seen to be of rare beauty. The hand of the Divine Artist is as skillful in the coloring of these sea people as in the painting of the manifold blossoms of the forest; and we marvel that the Great Creator of Worlds is so careful in the making of a little fish.

Mr. Longfellow has given us a fine description of a beautiful fish in his story of "Hiawatha." This is a part of it:

On the white sand of the bottom
Lay the monster Mishe-Nahma,
Lay the sturgeon, King of Fishes;
Through his gills he breathed the water,
With his fins he fanned and winnowed,
With his tail he swept the sand-floor.

There he lay in all his armor;
On each side a shield to guard him,

Plates of bone upon his forehead,
Down his sides and back and shoulders
Plates of bone with spines projecting!
Painted was he with his war-paints,
Stripes of yellow, red, and azure,
Spots of brown and spots of sable;
And he lay there on the bottom,
Fanning with his fins of purple.





HE old sea had several crab stories on the beach this morning, and they were all illustrated in natural colors.

The first crab story I read was about a fine *King Crab*.

He was a big fellow who had been swimming the sea, and burying himself in the mud, and walking clumsily up and down the sea sand for years.

He always wore a coat of shining mail.

He had one set of legs to swim with and another set of legs to walk with.

Wise men who study about king crabs say they have bluish-colored blood.

King crabs are proud of their "blue blood."

Another reason why this king crab may have felt important was that wise men had quarreled over him and his family.

Some of the wise men thought he ought to be counted along with other kinds of crabs.

Other wise men said, "No! he belongs to the spider people."

The king crab might well feel sure that anything the wise men quarreled about must be more or less important.

Perhaps it made him feel that his family were great folks to know that one of the wise men had said, "King Crab's early relatives were fossils"; that is, they had been preserved in stone.

Now all these things were true. But the king crab himself was not a bit wiser nor better either for his blue blood or his relatives in stone.

Like the rest of us, who are not king crabs, it did not make so much difference what his relatives had been as what *he* himself was.

Whether our king crab knew this or not, he had grown to feel very big, and his shiny coat of mail was too tight.

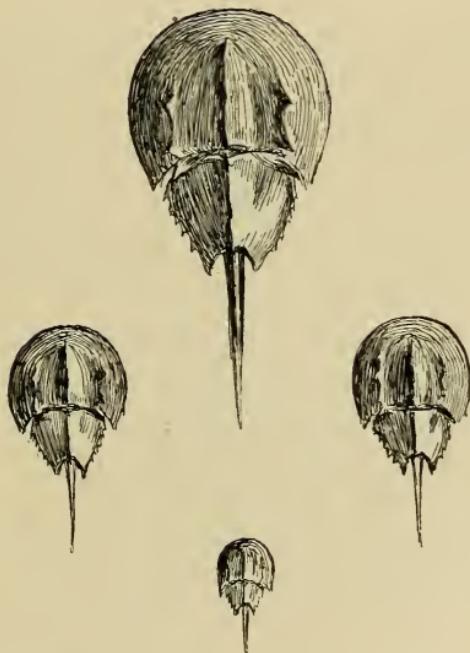
The only thing for him to do was to take it off and have a new one.

So he cracked it open and crept out between the plates.

He had done this same thing many times in his life.

The skin or soft armor under his old armor soon became as tough and shining as the smaller one he had cast off.

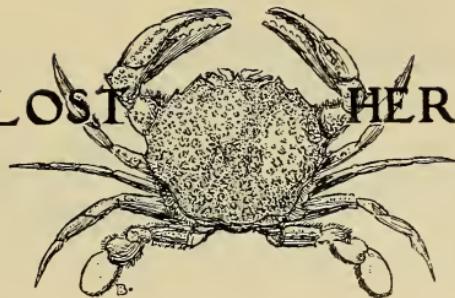
It was his old armor I picked up on the beach. And this is the story that I found along with it. The king crab is also called *Horseshoe Crab*.





THE CRAB

THAT LOST HER CLAW



NOTHER crab story I found in my picture book by the sea. This time it was of a pretty *Lady Crab* or *Sand Crab*.

She wore over her body a lovely shell of many pieces. It was white and was dotted and ringed with delicate shades of purple and red.

She has a way of burying herself in the sand clear up to her eyes; and there she sits and watches for her food, which is sure to come, for the sea water is full of tiny eggs and of animals which crabs like.

If danger approaches our Lady Crab quickly disappears beneath the sand.

She has two arms that are long and large and furnished with pincers.

Next to these arms are three jointed legs on either side which end in points.

Back of these are her two flattened swimming feet, one on each side.

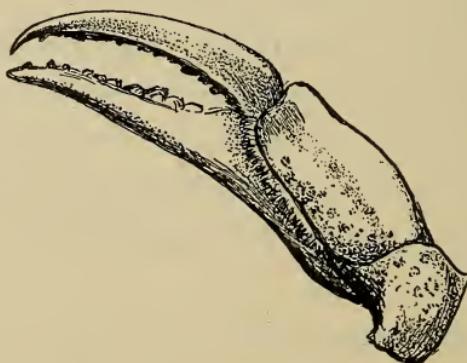
At least, that is the way she was made.

But this morning I found one of her long jointed arms with its big claw lying upon the beach.

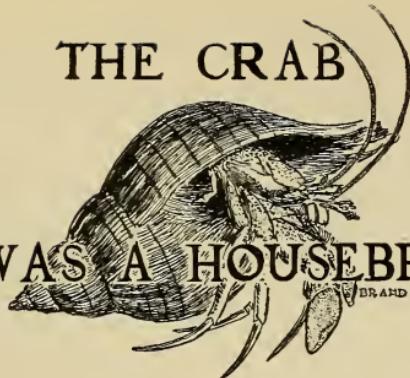
The story told how there had been a crab battle and my Lady Crab had gone off leaving an arm upon the sand.

She cared very little about this, however, as she has the power of growing another arm or leg or even eyestalk when one has been lost.

She may have cut off her own arm, for crabs doctor themselves, and when they find a member is injured they simply snap it off and grow another.



THE CRAB



THAT WAS A HOUSEBREAKER



HERE once lived a little prince in his castle by the sea.

The prince's name was Prince *Fasciolaria*.

The castle in which he lived he had built himself.

He had worked all his life to build it, and now that it was large and fine he was as happy as he could be.

He had polished his palace walls within and painted them without.

He had made a strong door with which he had shut himself in.

But one day when little Prince *Fasciolaria* had the door of his castle open, he felt a sudden shock, the walls of his castle shook, and before he could shut his door he was dragged out and torn to pieces and eaten. Yes! he was eaten.

Then the robber went into the beautiful palace Prince Fasciolaria had built, and lived there as if it were his own.

The robber who killed and ate the prince and lived in his castle thereafter was called the *Hermit Crab*.

The way he gets into the house is very awkward, for he just backs in.

Then he curls the back part of his body around a column in the center and allows himself to be pulled to pieces before he will let go.

If he goes for a walk he carries the house upon his back, for he is afraid to be caught out of it, because he has lost a part of his protecting armor.

The shell armor that should cover the whole of his body is gone from the part that is kept covered, and that part has become so soft and tender that he is always in terror lest it be hurt.

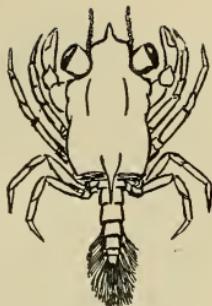
His back pairs of legs too have lost their strength and are withered and helpless from having been cramped and unused.

That is the price the robber has to pay for the kind of life he lives.





HOW CRAB BABIES GROW



BABY crabs are hatched from tiny black eggs.

Mother sea crabs are very careful of their sacs of eggs and carry them until they are hatched.

Baby crabs grow fast, but are so unlike their mothers that one who did not know them would never guess they had started to be crabs.

Some of them seem all head and eyes and tail, and, as if they themselves did not know what to do, they keep turning head over heels.

Millions and millions of them tumble about in the sea.

While young they change their skin many times, each time growing more cr abl e.

With the change of skin, legs and claws develop, but even when they get to be crabs they still seem uncertain of themselves, and they scurry along backwards

and sideways as if they did not quite know which way their legs were meant to go.

Their breathing organs are frilled, light-colored gills on the underside of their bodies near where their legs and bodies join.

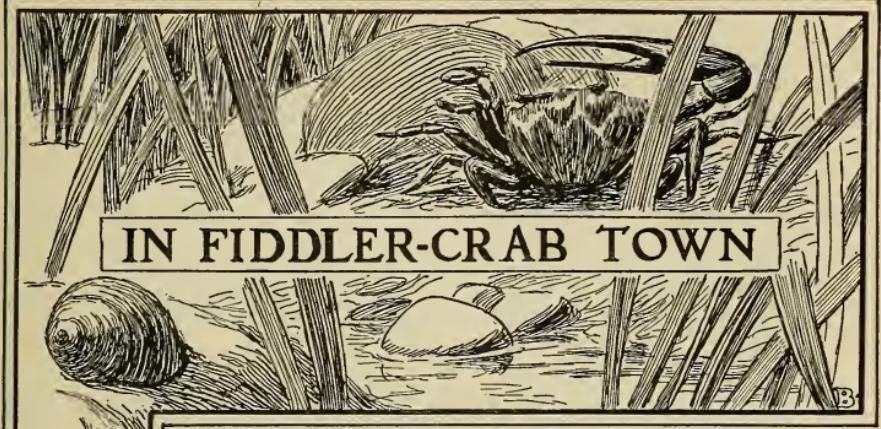
Crabs like to wear armor. The crab's armor is really its skeleton, its bones being needed on the outside rather than within its body. In most kinds of crabs this outside skeleton or armor is beautifully polished and painted and dashed with color, even to the ends of the claws.

There is one kind of crab, however, that wears only white.

If you live by the sea you will sometimes see crabs carrying pieces of sponges and seaweed and even other sea animals on their backs. This is one way in which they seek to hide from their enemies.

Many of the crabs in the sea are so small that it is not easy to see what they are doing or even to see them at all.





IN FIDDLER-CRAB TOWN

T

HE little *Fiddlers* are so common and so funny that we must learn something about them and the dwellings they make for themselves.

Their towns are near salt marshes or the sea, and their houses are built below the surface of the ground.

It is interesting to watch them at work, but if we are to succeed in this we need to keep very still, for they are timid little people who do not like to be watched.

They honeycomb the ground with their burrows. The mud or sand they dig out they work into crumbs or little balls which they carry away.

We may dig carefully down and examine their burrows, which are an inch or two in diameter and all made on the same plan, with passages running in the same direction and with a little chamber at the end.

The right pincer of the male fiddler is very much larger than his left. When he enters his hole he backs in and leaves his large claw uppermost to serve as a door or to be ready to snap at an intruder.

The name of *Fiddler Crab* has been given him because of this strange large claw or pincer, which he keeps drawing back and forth something as a violinist draws his bow.

He is also named the *Calling Crab*, for as he scurries along sideways it is easy to imagine he is beckoning with the long waving claw which he carries awkwardly above his head.

Some one tells us this may be his funny crab way of saying to us, "Catch me if you can!"

The little fiddler does not enjoy being tumbled about by the saucy waves.

If they handle him too roughly, he quickly makes for himself a little cave in the sand and creeps in and covers himself up.

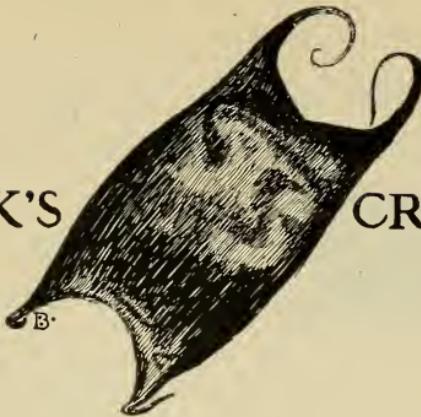
He accomplishes this by digging out the sand and making it into crumblike balls which he lays outside the hole.

When the hiding place is large enough he pats the edges of it hard, then creeps in, and with his deft little claws works the sand over himself firm and hard. When the waves come again he is not to be found.



Sunset on the Water

A SHARK'S CRADLE



LITTLE four-cornered black cases, like the one in our picture, are often picked up along the seashore.

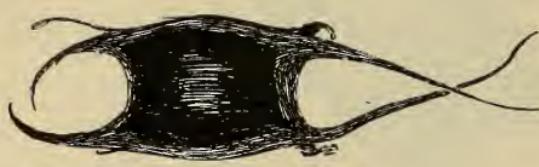
Queer little pouches they are, and to the questions of the curious very unsatisfactory answers are often given concerning them.

"They are mermaids' purses," says one. "They are mermaids' comb cases," says another; and questioners, both young and old, wish they might know more about them.

These queer black cases with their pointed corners are little cradles that the old Sea is ever rocking,—sometimes none too lightly.

There are two kinds of these cradles; one has its corners ending in slender points, and is a shark's egg case.

Another kind has its corners drawn out long and threadlike, and contains an egg of the skate,—a broad, flat, smooth, unsightly fish with a whiplike tail.



Each egg case accommodates but one baby shark or one baby skate.

Let us be thankful that it is but one.

Through a slight opening in the egg case enough water is admitted and allowed to pass to keep the egg moist. This is necessary to its life.

Many eggs are cast upon the sand and become dry and lifeless.

Notwithstanding this, and that each little black pouch contains but a single egg, sharks and skates abound and are the terror of the seas.

Fierce and strong, swift and voracious, well may they be feared by the other inhabitants of the seas as well as by man.

The four-jointed jaws of a shark have many rows of teeth which turn backward and prevent the escape of its prey.

The teeth are sawlike at the edges, and while the outermost row may stand straight and ready for use, other rows may be folded back nearly flat against the animal's jaw until ready for action.

Sharks often follow a vessel for days, swallowing greedily whatever may be cast upon the water.

They sometimes take very strange things into their stomachs.

I once read that a shark when killed was found to have a lady's workbox in its stomach.

The shark wears little or no armor, for there are few animals in the sea that it fears.

I will tell you a shark story that is true.

One morning, just as the sky began to grow bright with the fires of dawn, a few of us who had risen early that we might behold the sea in her garments of mist saw a strange sight.

A little way out from the shore there were fish leaping into the air; hundreds, thousands of them rose together a few feet from the water, and as they fell back into the sea as many more were in the air.

In wonder we exclaimed and called others to witness the strange scene.

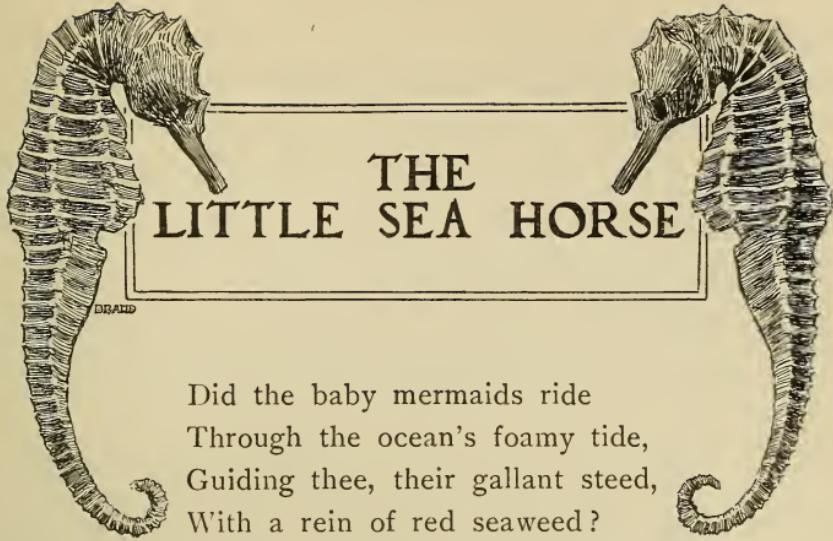
Directly the mystery was explained, for the sharp, large fins that cut the surface of the water betrayed the presence of sharks.

We were familiar with the sight of those great fins rising above and cleaving through the surface of the sea; and now when we saw them we understood why thousands of fish were leaping into the air.

A number of sharks were chasing a great school of fish. In the hot pursuit both sharks and fish had dashed into deep water within the sand bar and near the shore.

As the sharks were upon them the terrified fish leaped into the air, seeking to escape the open, hungry jaws of their pursuers.





Did the baby mermaids ride
Through the ocean's foamy tide,
Guiding thee, their gallant steed,
With a rein of red seaweed?

Who can tell?

In thy sea life did a troll
Groom thee in a coral stall?
Was a cockleshell thy manger,
Filled with seaweed, little ranger?

Who can tell?

Do the little mermaids weep
In their sea caves, fathoms deep,
That before their ocean door
Thou art bridled nevermore?

Who can tell?

Certain it is the mermaids would not choose these
little horses if they were in haste, for they are but poor
swimmers and strong sea currents upset them.

Quiet, slow-going, and harmless little fishes they are, who had rather "stand" with their tails twisted around the seaweeds than to gallop through the seas.

They love the warm waters where they have their homes, but it is not an uncommon thing to find the little steeds stranded far up our coasts.

They attach themselves to seaweeds and are often carried by the waves long distances from their native "race tracks."

Their heads and necks so resemble those of horses that the name *Sea Horses* fits them well.

Those we find upon our coast are not over six inches in length.

Their tails are slim and curling and finless, and by them the little fishes fasten themselves to corals and to seaweeds, and thus safely anchored they do not mind the currents and the tides that might otherwise wash such little steeds away.

Their position in the sea is generally rather erect, whether making their way through the water or when anchored by their twisted tails to some sea root they feed in their seaweed pastures.

They have a kind of crest upon their heads which gives them the appearance of little knights of the sea.

Though but little fishes they show great love for their young. The males have a pocket upon their

breasts in which they carry the eggs and also their little "sea colts" after they are hatched until they are old enough to go out into the great water pastures and take care of themselves.

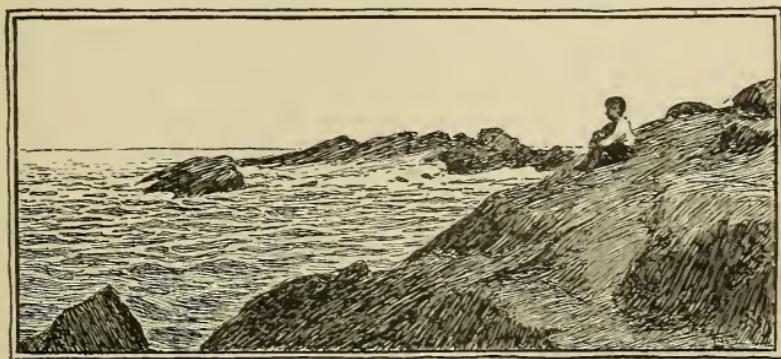
While they are in this pocket it is said they are nourished by a kind of fluid secreted there.

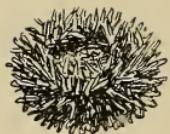
The pouch is drawn in a little at the top to keep the little sea horses from falling out into the sea before they are old enough to shift for themselves.

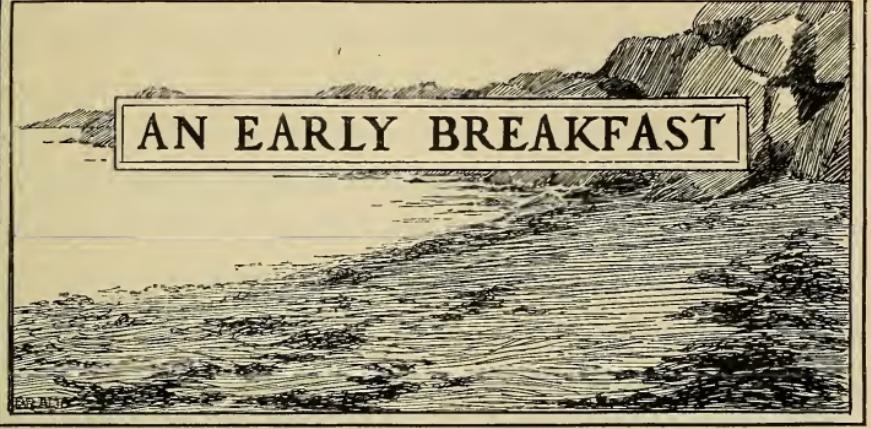
In his pocket or brood-pouch, as it is called, the sea horse carries as many as two thousand eggs at a time.

Sea horses may be called cross-eyed, for their eyes do not work together.

One eye may be looking straight ahead while the other is turned in a different direction.







AN EARLY BREAKFAST

DOWN by the sea in the early morning I read another tale.

Queer little footprints dented the sand.

The footprints were such as only the feet of birds could make.

The tale that was written was of a banquet the old Sea had been all night preparing for the birds of the air, for the water birds, and for the long-legged waders.

The tides and the winds and the waves had all helped to spread the feast upon the white sand of the beach.

A night of fasting had sent the birds early to the breakfast they were sure to find.

In the sand we learned who had accepted the old Sea's invitation, and in some cases we read what had been eaten for the breakfast.

We knew who came by the kind of footprints left in the soft sand.

Mangled sea snails and empty pompano shells revealed some of the things that had been eaten.

Warblers had been there. They came hopping over the sand, leaving fan-shaped tracks in pairs.

Other footprints with webs between the toes showed that swimmers had touched at the port in the early morning.

Still others had left tracks that were farther apart, three-toed and not in pairs. We knew that these last were the tracks of long-legged waders, who with their long and slender beaks had searched the sand for worms, crab babies, and sea spiders.

A few yards away large, uncanny birds were greedily feeding upon dead fish, regardless of our presence.

They were buzzards, the scavengers of southern seacoasts.

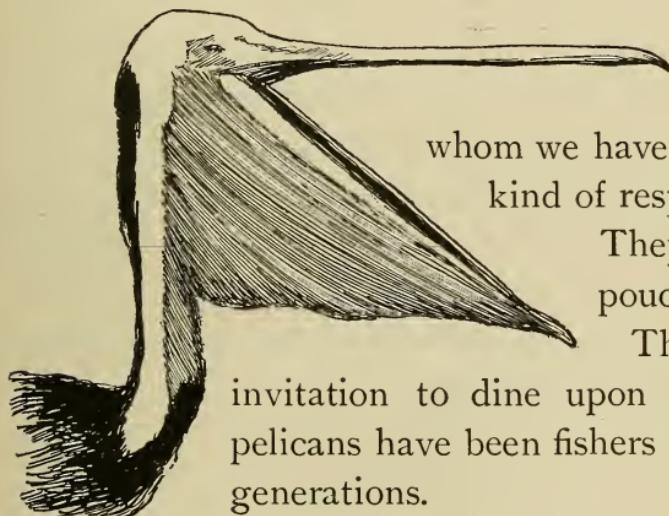
In spite of their being ugly and unmannered, we extend to them a kind of respect, for we learn to know they are among the best friends of the dwellers by the tropic seas, disposing as they do of decaying substances which otherwise must be harmful.

Awkward as they seem when on the land, and greedy and offensive as they are in their manners, they are really beautiful in flight.

With easy, graceful motion, and with only an occasional flap of his great wings, a buzzard seems to be showing what an easy thing it is to fly.

There is another class of sea birds which are equally ungraceful upon the land, but for whom we have also a certain kind of respect.

They are the great pouched pelicans.



They care for no invitation to dine upon the sand, for pelicans have been fishers through many generations.

The great pouches under their beaks are large enough to contain several quarts, and are not infrequently filled with hundreds of little fishes.

These birds too are strong upon the wing, and it is a beautiful sight to see them hovering in the air at a considerable height above the water, circling and balancing until their keen eyes discover a school of fish in the depths below.

Rapidly then they dart downward, plunging into the water with great force and diving out of sight.

Very soon they appear again with the fish that they have captured.

However the ungainly pelican may waddle upon land, it can but be admired upon the wing or as it dashes down, striking the water with a great splash, or again as it sails away, now rising, now falling, with the crested waves.

The bodies of these birds have great numbers of spaces beneath the skin which are filled with air. In this manner their bodies are cushioned, and to strike the water with such force as they do gives them no shock.

The pelican's nest is built upon the ground among the reeds at the water's edge.

Its two or three white eggs are guarded well, and it is in the wonderful pouch beneath its beak that the pelican carries supplies of food and water to its nestlings.

There is an old-time fable telling that the pelican tears its breast that it may nourish its brood with the blood that flows therefrom.

Those who have studied pelicans say that this is not true, but that the idea may have arisen from seeing the red tint that appears upon the beak and the breast of some of these birds.

Pelicans are to be seen in great numbers along the shallow borders of the sea.

Where new land is forming at the southern extremity of Florida they may be easily studied.

No one harms them, for they, like the buzzards, are useful as scavengers.

Without fear they gather around passing vessels for scraps that may be cast out.

Where piles are driven down near the water's edge to break the stress of waves, hundreds of these birds are to be seen perched, motionless and solemn,—a funny lot of fishers,—watching for game in the sea beneath them.

Once upon a time I sat on the deck of a little steamer and watched pelicans as they sailed gracefully over the water and finally swooped down with a great plunge into the sea.

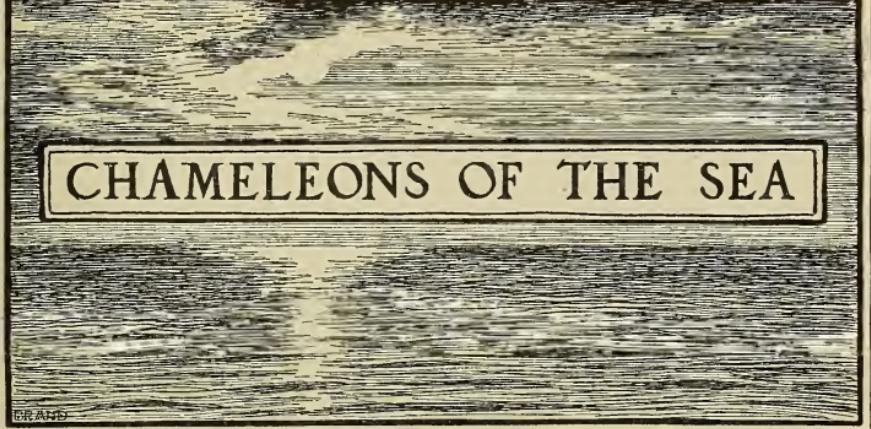
Gray and white gulls were often their companions, and I learned that the friendly pelicans not uncommonly share their fish with the gulls; for of the fish that is torn to pieces enough is left upon the water to supply the gull with a meal and at no labor of its own to capture it.

One who sailed with me, and who knew the habits of these birds, said, "It is not uncommon to see a gull sitting confidingly on the back of a pelican as

the latter rides through the billows; the gull secure and happy, sure of the meal the kindly pelican will furnish. Because of its service to the gull, the pelican is sometimes called 'the gull's tender.'"

Surely the ancients were right when they made the pelican an emblem of charity.





CHAMELEONS OF THE SEA

GRAND

NE night a wandering harper came down to the sea.

He was old, yet ever young.

The wandering harper was the wind, and the sea was his lyre.

We who were near and who loved both the wind's songs and the sea's songs hastened to the beach.

Little wave messengers ran up the silver sand to meet us and to lay gifts at our feet.

Far off and near the music swelled, sweet and strong, low and loud, yet always so wonderful that no man could understand it.

But there was something more than even the songs of the wind and the sea which held us in thrall.

Overhead the full moon sailed through billows of cloud, and across the sea lay a road of gold and amber.

The music of the old harper upon his sea lyre and the strange beauty of the moonlit sea cast a spell over us.

“What does it mean?” said our man of science, as awed and tender as a little child.

“It means the sea folk are holding a carnival,” said another.

“I wonder, oh, I wonder!” said the little girl who so often had sat by the sea and wondered.

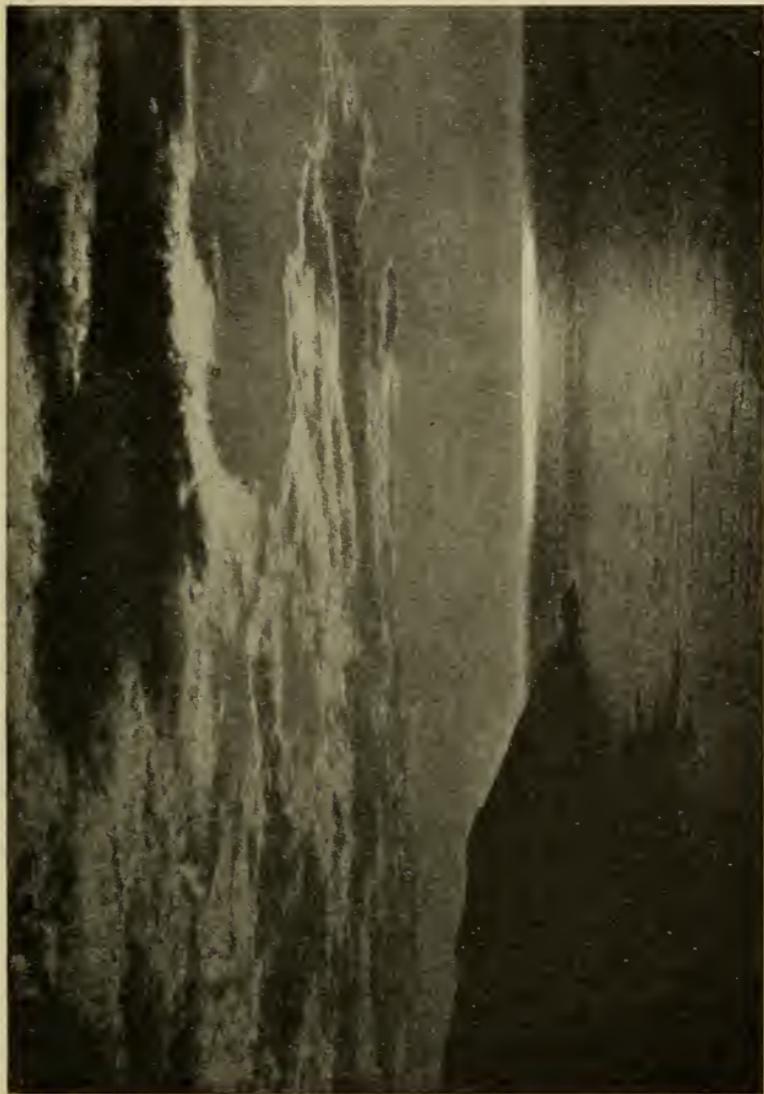
Her whole figure was radiant and her white pinafore fluttered like wings in the moonlight. I put my arm around her with a queer feeling that she might flit away through that track of light to an unknown shore.

“It means,” said an old fisherman who had joined us, “that there ’ll be thousands o’ squids that never ’ll sail the seas after to-night. Ye mark my words! ye ’ll be thinkin’ at rise o’ sun that it’s the squids that’s been a-celebratin’!”

All night the wandering harper played. All night the beautiful moon sailed through the cloudy seas and sent down its track of light to the waves below.

In the gray of the morning the little girl who had wondered was at my side and together we went again to the beach.

Across the Sea lay a Road of Gold and Amber



Truly the old fisherman knew; for hundreds of squids lay stranded upon the sand.

We helped a few back into their water home; but of most of them it was true, as the old fisherman had said, "they would never sail the seas again."

We were anxious to study them at our leisure, but first sought our friendly fisherman at the lighthouse.

"Ye see it's as I told ye!" he said as he fastened a small squid upon his hook.

"But why are there so many of these queer fellows on the sand this morning?" the little girl asked.

"That I can't tell!" answered the ancient mariner. "Reckon they had a party last night; reckon they sang

‘We won’t go home till morning! ’

It's morning, an' there they be!"

"But you told us last night that they would be on the sand in the morning. How did you know?" she asked.

"It all comes o' livin' by the sea, my little miss, an' gettin' acquainted with the habits of its folks," the old fisherman replied.

"Moonlight draws the squids as much as it draws the tides, I reckon. There be folks we call 'moonstruck,' an' that's what I reckon squids be. When the moon shines of a night, ye may be pretty certain



there 'll be squids on the shore in the mornin'. Nobody knows exactly why; leastwise *I* don't.

"Squids travel backward mostly, through the shallows; an' it may be that when they get their big eyes on the moon an' begin their travelin' backwards, on the beach they're sure to be landed, if there's any beach behind 'em.

“I don’t seem to have given ye much of a reason for so many bein’ stranded at once, but no squid ever explained his actions — far as I know.

“When I was a young man I used to run a fishin’ smack along the Banks o’ Newfoundland, an’ we used to turn this fancy o’ the squids to our advantage.

“We needed tons o’ squid for bait for catchin’ cod; an’ we used to fasten a big light in the bows of our boats and then put for shore. The silly squids, keepin’ their big eyes on our illumination, would swim straight backwards until we’d land ‘em by the hundreds on the Banks.

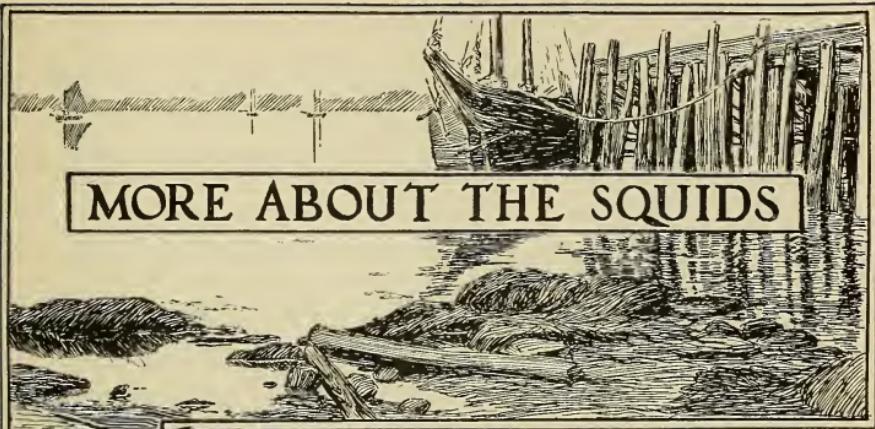
“Did ye ever see the squids change color, little miss?” the “ancient mariner” asked after a pause. “They’ll grow all the colors o’ the rainbow, — regular beauties, — then all at once ye can’t see one, though there be dozens of ‘em under your very eyes.

“If ye want to study squids, just go down yonder to the pier; ye can watch ‘em there as much as ye like.

“The little miss may be lucky enough to find one of their ’ristocratic relations ’long the beach here some day. There be folks that find ‘em here once in a while.”







MORE ABOUT THE SQUIDS

D
DRAWN

OWN to the pier we went. There we found squids that were yet alive and "in full possession of all their faculties," lying imprisoned in the deep tide pools.

No better opportunity could have been given us for our study, and we were not long in seeing what our fisherman friend had called their "changing color."

We selected two fine specimens nearly a foot long that lay near together, and sat down upon the sand to watch their every movement.

One squid was of a bright red color when we found it; the other was a beautiful blue.

In a few seconds the little girl who wondered exclaimed: "They are playing tricks on us! The red one is growing blue and the blue one is green; now there are waves of yellow running over them both!"

True it was: we saw pink and blue and brown and orange flash with great rapidity through the tissues covering the bodies of these wonderful creatures.

We examined the dead squids that lay near by and found that small dark spots were to be seen covering the surfaces of their bodies.

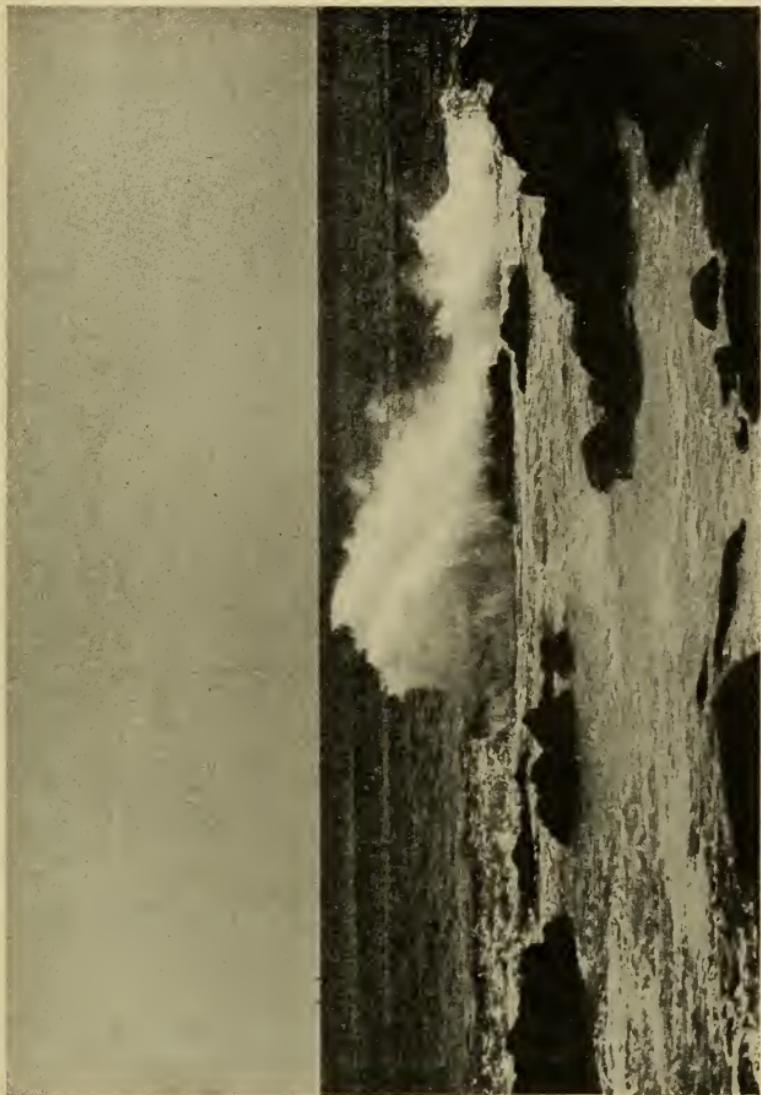
We walked out on the pier and looked for other squids in the water below us.

For some time none were to be seen. But we remembered our fisherman friend had told us, "There 'll be times when ye can't see one though there be dozens under your very eyes."

We were almost ready to give up and go back to our prisoners in the tide pools when along came a school of bass, leaping, flashing, and playing as if they were just "out of school," and up darted dozens of shining squids and caught a breakfast in their long, suckerlike arms, for the unsuspecting school of bass had seen the squids no more than we.

The experience made us wiser, and we watched the wily squids sink back to the sea bottom, assuming so perfectly the color of the sand and wrack as again to be unnoticed.

As we became better acquainted with our squid friends we learned that they were able quickly to assume the color of surrounding objects.



Surf

This is for their protection as well as to assist them in securing their prey.

The dark spots we had discovered upon the bodies of our dead squids showed us where lay little color cells covering the surface of the animal's body.

These cells appear to run together, and upon opening and closing rapidly, at the will of the squid, they send the color fluids over the strange creatures in rapid flashes, making them really the chameleons of the sea.

Besides this power which they have of making themselves inconspicuous, they have still another means of protection and of escape from enemies.

This is an ink bag, which every squid carries.

If too hotly pursued it forces ink from this sac into the sea, and the surrounding water at once becomes so clouded that the squid, unseen, is able to make its escape.

Watching the squids darting through the water so rapidly, we do not wonder they are sometimes called "sea arrows" and "flying squids."

Will you believe me when I tell you that the squids are near relatives of Prince *Fasciolaria*, and of Captain *Fulgor*, who lived in his house boat, or of the *Bivalves*, those sea people who live in houses with double doors?

This is really true.

We must remember that the shell in which the animal lives is its house, and not the animal itself, no matter how closely they may be joined together.

We find the bodies of Prince Fasciolaria, of Captain Fulgor, and of the Bivalve families are really made on very much the same plan as the bodies of the squids.

They each have their all-important mantle.

In the cavity of the mantle of each are heart and gills and nerves and digestive organs, acting very much alike in all of them.

Wise people, who think they have become very well acquainted with them all, tell us that the squids have finer organisms and are much "smarter" sea folk than are their cousins of whom I have told you.

They tell us too that the brains of these "smart" squids are in a ring around their gullets!

It seems to be the opinion of squids that they need no outside shell for protection, but that they do need an inside shell or backbone for support.

So their shell is *within*, and is a long, slender rod. It is shaped something like a quill or feather, and is called a "pen."

The mantle cavity in the squid is really a bag formed of the mantle and having its opening only at the end next to the animal's head.



The Dashing Spray

In this bag we find a large tube or syphon which carries water to the gills, and through which the water is forced from the cavity in such a way and with such power as to shoot the animal backward with great rapidity.

The squid has also two fins that help it in swimming.

Its head appears to be split up into ten arms.

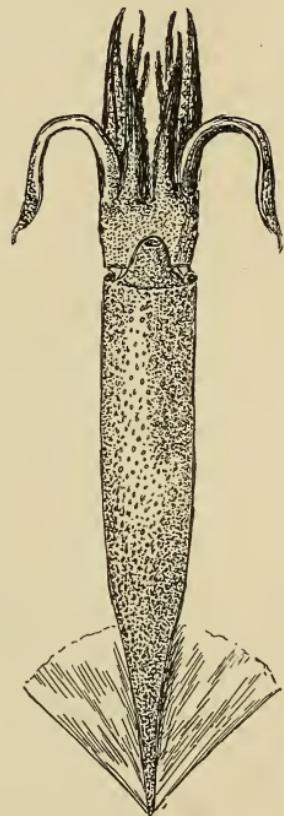
This gives it another name which is long and hard, but which means "head-footed," or "arms around the head."

Eight of these arms are short and thick, and covered on the inner side with rows of suckers.

The two remaining arms are long and slender excepting near the ends, where they enlarge and are oval and club-shaped, and are also covered with sucking disks.

These arms with all their suckers are powerful weapons from which there is no chance of escape for the little sea traveler once within their grasp.

Especially terrible is the giant squid, whose arms are often thirty feet long, reaching out on every



side and armed with hundreds of these powerful suckers.

Notwithstanding the weapons our common squids carry and the tricks they play, they still form a large part of the food of fishes, jellyfishes, whales, and sea birds.

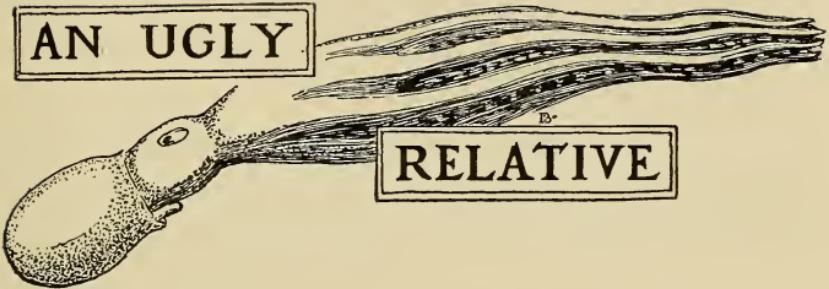
Even the great and dangerous giant squid fears the sperm whale, and in their battles the sperm whale is always the victor.

Tell us, sea squids, little wonders,
What you do and what you think.
Can't you write us all about it?
Write it with your *pen* and *ink*!

Then the squids, the little wonders,
Sent in gurgles through the brine,
“We have written scores of letters
And you cannot read a line.”

Said the squids, the little wonders,
“We had cousins long ago
Who have left on stony tablets
Things that you would like to know.”





AN UGLY

RELATIVE



OUR squid has other relatives beside such sea people as live in houses with their double doors or the steeple-house holders.

One of these relatives is so ugly and so dangerous as to be called "devilfish" by the seamen.

Its real name is *Octopus*.

Its body is rounded in shape, while the body of the squid is long. Like the squid, it has two large and highly developed eyes, sleepless, alert, and cruel.

Its formidable mouth, at the top of its rounded body, is armed, like that of its squid relative, with two teeth that look somewhat like the beak of a parrot.

This mouth is surrounded by eight serpentlike arms bearing their rows of terrible suckers.

When these cruel arms once seize upon their prey there is no release for it, unless the arm with its

clinging suckers can be severed from the body to which it belongs.

The prey is torn to pieces by the parrotlike beak, and cut by the rows of teeth upon the "tongue" of the animal, and quickly swallowed.

We are told that a dozen men are barely a match in strength for a full-grown octopus, and that fierce is the battle when a boat's crew attempt the capture of one.

The cuttle bone of commerce is the internal shell or the backbone of the kind of octopus known as a "cuttlefish."

This bone is much larger than the quill-like "pen" of the squid.

The ink taken from the ink sac of the octopus is saved for the market, and becomes the sepia which artists who work in water colors use.

With the frightful picture before us of a devilfish, ugly, pitiless, and savage, we are almost surprised that anything good can be said of the creature.

But a mother octopus shows a devotion to her eggs and to her young equal to that shown by gentle creatures of a harmless life.

This is not all, for she builds a nest for them requiring not a little labor.

Those who have been able to study the life of the creature in its native haunts tell us of its habit of hiding in holes among the rocks, and there, like a giant spider, watching for the unwary whom it may seize and devour.

In a hiding place like this a mother octopus has been known to make her nest, bringing together shells and stones for its construction.

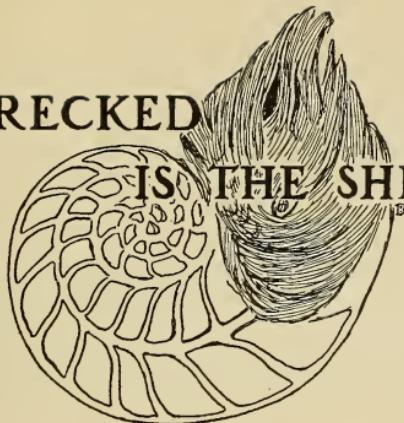
Thousands and thousands of eggs, tiny almost as a grain of sand, are laid in this nest.

There for weeks she watches over them, fondling them at times with a sort of affection and guarding them with a dragonlike fierceness.





WRECKED



IS THE SHIP OF PEARL



E are glad to turn from the ugly octopus to two other members of this family of whom we can tell more pleasant stories.

These two live and sail in painted boats as fine as any which their cousin, Captain Fulgor, can command.

One of these is the *Nautilus* and the other is the female *Argonaut*.

Both little animals have the fleshy tube or siphon which is characteristic of the family and by means of which these little sailors propel their house boats backward through the water.

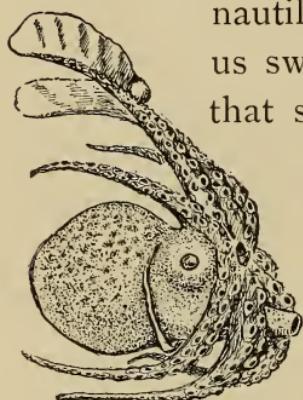
“The little miss” was “lucky enough,” as the old fisherman had said, to find, not one of the squid’s “ristocratic relations,” but the fairy boat in which it had made its life voyage. The little mariner was gone and “wrecked was the ship of pearl.”

The shell which "the little miss" found was one which had been the beautiful home of a nautilus.

These shells have several chambers, only one of which is occupied at a time.

As the little inmate outgrows one pearl-lined hall, it withdraws from it, seals it up, and leaves it forever, the living room of the nautilus always being the last built outer room.

Dr. Holmes has told the story of the chambered nautilus in a beautiful poem, and brings us sweet lessons from the frail tenant of that ship of pearl.



The female argonaut, or the "paper sailor," is like a little fairy princess of the sea.

Her house is in deep water far from jagged rocks, for her bark is too fragile to be beaten by angry waves against a rock-bound coast.

She loves warm seas best, and sometimes through the clear water she is seen walking on the sea floor, bearing her shell upon her back after the fashion of her Fulgor cousin or the gay Prince Fasciolaria.

Still this little sea fairy, who sails so fearlessly through stormy tides far out at sea, is not fastened to her house as they are fastened to theirs, but is only

held in her place by the broad ends of two of her "arms," sometimes called "sails."

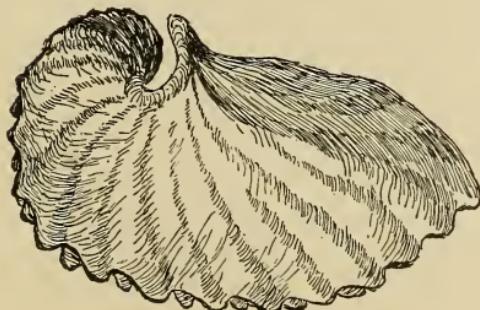
These arms seem to embrace the little boat in which the fairy rides.

The delicate, crumpled shell of this argonaut sailor is not chambered, and seems to have been made—secreted, we say—by the little fairy only as a safe and beautiful home for her eggs.

So this little argonaut mother does her utmost that her children may sail safely on "life's unresting sea."

He who creates the planets
And leads them on through space
Cares for these tiny builders
And gives them skill and grace.

How much He cares for beauty
Reveals each tinted shell;
How much for perfect building
These pearly chambers tell.



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